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Animal and
Plant Health
Inspection
Service

Washington, DC 20250

Subject: Pine Shoot Beetle Program Manual
Transmittal 1-93

To: Holders of Domestic Program Manuals

Date: February 26, 1993

Here is a Program Manual for the Pine Shoot Beetle Program. It includes the survey procedures for detecting and delimiting the pine shoot beetle, and the regulatory procedures for facilitating the movement of regulated articles from and through quarantined areas. Also included in the Manual is an introduction, appendixes, and an index to support the procedures.

Incorporated into the contents of the Program Manual are the updates made in an Interim Rule published January 28, 1993. Also, the contents supersede the regulatory procedures which were distributed to only Northeastern Regional holders on November 12, 1992, and January 14, 1993.

Currently, research is being conducted on adding photostatic prints to Appendixes 2 and 4 to help survey personnel identify host plants and the pine shoot beetle. If successful, the prints will be distributed in the near future.

Use the Program Manual to help implement the Pine Shoot Beetle Program. That is, prepare for surveys, conduct surveys, report survey results, and enforce regulations.

B. Glen Lee
Deputy Administrator
Plant Protection and Quarantine

Enclosure

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United States Department of Agriculture

Animal and Plant Health Inspection Service

Washington, DC 20250

Subject: Pine Shoot Beetle Program Manual
Transmittal 02/94-01

Date: February 14, 1994

To: Holders of Domestic Program Manuals

The purpose of this update is to add trapping survey procedures to the program manual. This is the first update distributed in 1994; there were eight transmittals distributed in 1993.

Do the following to update your manual:

Remove Old Pages:	Insert New Pages:
i - viii (Contents)	i - viii (Contents)
1.3 - 1.8 (Introduction)	1.3 and 1.8 (Introduction)
2.1 - 2.20 (Survey)	2.1 - 2.32 (Survey)
6.1 and 6.2 (Appendix 3)	6.1 and 6.2 (Appendix 3)
8.1 and 8.2 (Appendix 5)	8.1 - 8.4 (Appendix 5)
9.1 - 9.6 (Appendix 6)	9.1 - 9.8 (Appendix 6)
15.1 - 15.10 (Index)	15.1 - 15.2 (Appendix 12)
16.1 and 16.2 (Comment Sheet)	16.1 - 16.10 (Index)
	17.1 and 17.2 (Comment Sheet)

B. Glen Lee
Deputy Administrator
Plant Protection and Quarantine

Enclosure

United States
Department of
Agriculture

Animal and
Plant Health
Inspection
Service

Plant Protection
and Quarantine

PINE SHOOT BEETLE PROGRAM MANUAL

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Fiscal Year 1993

UPDATE RECORD

Instructions;

1. Record the Transmittal Number and the date you received the update in the appropriate column.
2. Report any missing updates to Hyattsville.

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INTRODUCTION
Orientation to the Pine Shoot Beetle Program

History:

The pine shoot beetle (Tomicus piniperda) was detected on a Christmas tree farm near Cleveland, Ohio in July 1992. Immediately after the identity of the specimen was confirmed, the Animal and Plant Health Inspection Service (APHIS) began working with other plant protection agencies to determine the extent of the infestation.

Subsequent surveys demonstrated the presence of the pine shoot beetle from Illinois to New York along the Great Lakes. Most detections were in Scotch pine with a few in Eastern white pine, Austrian pine, red pine, and jack pine. Detections occurred in Christmas tree farms, nurseries, and established ornamental plantings.

In November 1992, an interim rule was established for 7CFR part 301.50 to quarantine portions of Illinois, Indiana, Michigan, New York, Ohio, and Pennsylvania. In January 1993, another rule was established, adding to the quarantine 100 percent inspection and a cold treatment option for nursery stock and Christmas trees. The regulation also restricts the interstate movement of regulated articles from the quarantined areas.

This pest has been intercepted repeatedly at many United States ports. Therefore, the pine shoot beetle was probably introduced into the United States through ship dunnage (rough-sawn lumber used to brace and stabilize cargo on large ocean vessels) from infested areas of Europe and Asia.

Many species of pine (Pinus spp.) serve as host for any life stage of this pest, but Scotch pine is preferred. Currently, this pest causes tree damage and economic loss across a wide geographic range in Europe and Asia.

Pest Information:

The pine shoot beetle is an insect known as Tomicus piniperda. It is a highly destructive pest of pine trees.

Adult pine shoot beetles are cylindrical, 3-5mm long, with shiny black heads and smooth prothoraxes. The wing covers vary from reddish-brown to black. Larvae are typical crescent shaped, legless grubs.

The pine shoot beetle can cause serious damage to the new growth of healthy trees as well as to the trunks of weak and dying trees and bark covered logs and lumber.

Additional pest information is in Appendix 4.

Program Priorities:

1. Cooperate with the States in enforcing the pine shoot beetle regulation.

2. Work with the States in conducting delimiting surveys around the known infested areas.

3. Complete a nationwide detection survey to determine if there are any other areas infested with the pine shoot beetle.

INTRODUCTION
Roles and Responsibilities (Who's Involved)

State Departments of Agriculture and Natural Resources, Forest Service (FS), and APHIS personnel are contributing to the implementation of the Pine Shoot Beetle Program.

The Program Coordinator is Milt Holmes who is located on the Domestic and Emergency Operations Staff, Plant Protection and Quarantine (PPQ), APHIS, in Hyattsville, Maryland.

Individuals who enforce the regulation include PPQ line personnel and State Departments of Agriculture and Natural Resources personnel. Individuals who conduct the surveys include PPQ line personnel, State Departments of Agriculture and Natural Resources personnel, FS personnel, and Cooperative Agricultural Pest Survey (CAPS) personnel. Individuals who plan the surveys are generally Officers in Charge at designated PPQ locations.

Survey Personnel:

PPQ line personnel, State Departments of Agriculture and Natural Resources personnel, FS personnel, and CAPS personnel will provide support in the field doing the following tasks:

1. Conduct visual surveys
2 Conduct trapping surveys
3. Facilitate the movement of regulated articles

Officers in Charge:

1. Prepare to conduct surveys
2. Report survey results
3. Coordinate and direct regulatory activities

Program Coordinator:

Coordinates all efforts while meeting the priorities of the program.

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USDA, APHIS, PPQ
Domestic and Emergency Operations
Federal Building, Room 643
6505 Belcrest Road
Hyattsville, Maryland 20782
Telephone: 301-436-8247

INTRODUCTION
How to Use This Manual

Manual's Structure:

The overall structure of the Pine Shoot Beetle Program Manual is standard to every domestic program manual. The main sections are: Introduction, Survey, Regulatory, Appendixes, and Index. The program requires no Control section at this time.

Each main section is tabbed and is independent, containing the step-by-step procedures for surveying and regulating the pine shoot beetle. Also, each main section has an Introduction which contains general information relating to the section's main content.

Each overview is a list of steps described in the section which follows. It can be used as a checklist for those familiar with how to do the steps.

The Appendixes are used as they relate to other sections of the Manual. In some places, an Appendix is referenced; while in other places, it is assumed that you accessed an Appendix to get the necessary information.

If the Contents section is not specific enough, use the Index to find a topic and its page number.

Users:

The primary users of the Program Manual are the PPQ line personnel and State Departments of Agriculture and Natural Resources personnel who are conducting visual and trapping surveys, and facilitating the movement of regulated articles.

Application:

Use the Program Manual on the job as a reference when preparing to conduct surveys and when facilitating the movement of regulated articles.

Related Documents:

The following documents provide the legal basis for the procedures found in the Program Manual.

- Federal Plant Pest Act, sections 105 and 107
- Plant Quarantine Act, section 10
- 7 CFR Part 301.50; Pine Shoot Beetle

Reporting Problems:

If you want to suggest an improvement or to identify a problem with the content of this Manual, complete and mail the Comment Sheet at the back of this Manual. If the problem is urgent, call Dawn Wade of the Professional Development Center at 301-663-0342.

If you disagree with policy in this Manual, contact Domestic and Emergency Operations, through channels. Ask to speak to Milt Holmes at 301-436-8247.

INTRODUCTION
Preventive Safety Measures

Safety measures involving personnel, the public, and the use of equipment are the responsibility of all individuals working on the Pine Shoot Beetle Program. Supervisors must advise employees of safety and health regulations and notify employees of known hazardous conditions. Employees must comply with all safety and health regulations. When necessary, wear protective equipment and report hazardous situations to your supervisor. Contact your supervisor immediately when an accident or personal injury has occurred.

Safety Reminders When Surveying:

- Beware of aggressive animals (for example, dogs, bulls, etc.) near the survey site.
- If surveying in an area where Lyme disease occurs, wear clothing that is protective against deer ticks. Apply an approved tick repellent to clothing (i.e., Permanone© which is available at local department stores). Inspect yourself after conducting visual surveys and servicing traps in a deer tick area. Prevention is the only way to avoid getting Lyme disease. Contact your local public health officials for other preventative measures to take.
- Avoid contact with poisonous plants.
- Carry plenty of drinking water.
- Wear proper clothing (long pants, sturdy shoes or boots).
- In areas with poisonous snakes, wear snake leggings and carry a snakebite kit.
- Use gates for entering properties; watch for electric fences!
- Respect resident's property.
- Carry Material Safety Data Sheets for all lures and pesticides.

Vehicle Safety Reminders:

- Check the condition of the vehicle before starting daily activities.
- Check to see that passage is clear before backing up the vehicle.
- Select a safe parking place for the vehicle while servicing traps or when leaving the vehicle.
- Drive slowly when roads are unfamiliar, winding, narrow, or unpaved.
- Always use your seat belts.
- Obey the posted speed limits. DON'T SPEED!
- Keep your vehicle free of debris and unsecured items.
- Tell your supervisor immediately whenever you're involved in an accident.
- Carry wooden blocks to block your tires when parking on a steep slope.
- Carry sufficient repair tools (jack and lug wrench) and safety equipment (flares and first aid kit).

SURVEY
Introduction

Overview:

The Survey section of this Manual explains procedures for conducting the following activities associated with the nationwide survey plan for the pine shoot beetle (Tomicus piniperda). These activities will be completed by Officers in Charge (OIC's) who will plan the surveys and by survey personnel who will conduct the surveys.

- Prepare to Conduct Surveys
- Conduct Visual Surveys
- Conduct Trapping Surveys
- Report Survey Results

Purpose:

The detection survey will determine if areas are free of or infested with the pine shoot beetle. Where the pine shoot beetle is present, the delimiting survey will determine the limits of the infestation.

SURVEY
Prepare to Conduct Surveys

Overview:

The following steps are an overview of the preparation to conduct visual surveys which support the detection and delimiting survey aspects of the Pine Shoot Beetle Program. PPQ OIC's are responsible for preparing to conduct surveys and report survey results. They are the primary users of this section of the Manual.

Step 1:	Acquire the Items Needed to Prepare Survey Kits
Step 2:	Designate Survey Areas
Step 3:	Schedule Personnel
Step 4:	Train and Supervise Survey Personnel

Step 1: Acquire the Items Needed to Prepare Survey Kits:

Use the following list of items as a guide to acquire and prepare survey kits for conducting visual surveys.

- State and county maps
- Pine Shoot Beetle Survey Field Data Worksheets
- Lists of Christmas tree farms and plantations, nurseries, and lumber mills in your State--obtain from the State Plant Regulatory Official
- Ball point pens--for completing worksheets and forms
- Pencils--for submitting suspect beetles
- Knife
- Gloves
- Binoculars (optional)
- Magnifying lens (optional)
- Mailing labels
- Labels for vials
- Vials or jars with alcohol
- Mailers and boxes
- Solar block sunglasses or brown tinted glasses (optional)
- Global Positioning System (GPS) receiver (optional)

- Supply of PPQ Form 391, Specimens for Determination
- Paper bags--for possible infested shoots
- Supply of pest alert pamphlets
- Pine Shoot Beetle Program Manual

Additional items needed to conduct trapping surveys are listed below:

- Traps: Lindgren® 8 funnel traps, Theysohn® traps. See Appendix 12 for illustrations of the traps.
- Lure for the Lindgren® and Theysohn® traps: 2 vapona strips; and 4, 3-component dispensers that include 2, 16 ml bottles of (+) a-pinene; 1, 16 ml bottle of 3-carene; and 1, 16 ml bottle of terpinolene. **NOTE:** The 3-component dispensers are available from Phero-tech.*
- Material Safety Data Sheets for lures and pesticide
- Extra trap parts--for repairing damaged traps
- String, wire, 3/8" concrete reinforcement bar (called a rebar), and/or wooden stakes--for hanging traps. **NOTE:** When purchasing rebars for the Lindgren® traps, have the top bent at a 90° angle to the long axis of the rebar. See an illustration of the Lindgren® trap in place in Appendix 12.
- Identification labels for traps
- Number labels for traps
- Permanent markers or grease pencils for numbering traps
- Hammer (optional for placing rebars or stakes into the ground)
- Flagging ribbon or marking tape (optional for marking trap locations)
- Forceps
- Sorting pan
- Detergent and water solution in a 2 liter bottle
- All other supplies listed for conducting visual surveys

*When researching purchasing contracts in the future, the release rate for the three compounds at 25°C should be in the following order:

1.	(+) a-pinene	619 mg/day
2.	3-carene	454 mg/day
3.	terpinolene	439 mg/day

Step 2: Designate Survey Areas:

Survey areas are designated differently depending on whether you are conducting a detection survey or delimiting survey for the pine shoot beetle. Therefore, the guidelines are divided between those for detection surveys and those for delimiting surveys.

Detection Survey:

Designate high-risk counties to be surveyed. Those counties meeting one or more of the criteria can be considered high-risk and can be designated as survey areas. The designated high-risk counties will serve as the survey areas from which sites will be selected by OIC's or survey personnel. Use the following listed criteria to determine which counties in your State are considered high-risk.

- Borders the Great Lakes or other inland waterways such as Mississippi and Ohio Rivers exposed to international cargo vessels.
- Contains ports where shipments of host material may have been received from infested areas of foreign countries.
- Contains saw mills, pulp mills, gathering yards where timber operations gather material before distribution.
- Contains an abundance of pine host material such as Christmas tree farms or plantations, nurseries, privately grown lots where there are more than 25 pine trees.
- Contains inland locations where substantial shipments of pine Christmas trees or pine nursery stock were received during the past few years from known pine shoot beetle infested areas.

Delimiting Survey:

On a map, construct a grid of points 5 miles apart extending two tiers of counties from the closest infested county or a minimum distance of 25 miles outward from the last infested county as a result of the detection survey. When constructing the grid points, consider the scale of the map. The grid points will serve as the survey areas from which a site will be selected by OIC's or survey personnel.

NOTE: If a positive infestation is found at a site while surveying for delimiting the pine shoot beetle, extend the grid of points two tiers of counties from the closest infested county or a minimum distance of 25 miles beyond the positive site.

Step 3: Schedule Personnel:

In order to schedule personnel to conduct visual and trapping surveys, you must know the appropriate time to conduct each type of survey and when detection and delimiting surveys are considered valid and complete.

Appropriate Time to Conduct Visual Surveys:

Visual surveys must be conducted during July, August, September, or October. Low temperatures of 20°F (frost conditions) prompt the pine shoot beetle to leave the shoots and move to the base of the pine trees and on to dead and felled trees to overwinter. Therefore, in some southern States, visual surveys might be conducted through the winter months.

Appropriate Time to Conduct Trapping Surveys:

Traps should be placed in survey areas during the late winter, with all traps in place no later than March 1 in southern areas and March 15 in northern areas. All traps are to be in place before the first captures of beetles are expected, which depends on temperature. The pine shoot beetle will begin flying when daytime temperatures exceed 12°C (53.6°F) for several hours. Once in place, traps should be serviced on a maximum 2 week schedule until approximately June 1.

When a Detection Survey Is Valid and Negative:

A valid, negative detection survey consists of negative results from any combination of visual and trapping surveys which have been conducted at a minimum of 10 sites in designated high-risk counties where the survey personnel received adequate training and supervision. Also, the survey data must be entered into the National Agricultural Pest Information System (NAPIS).

When a Delimiting Survey Is Completed:

A delimiting survey is completed when it extends two tiers of counties from the closest infested county or a minimum distance of 25 miles beyond a known infestation with negative results.

Step 4: Train and Supervise Survey Personnel:

Before surveying begins, provide adequate training and supervision to support the following activities.

1. Identify pine host trees. Refer to Appendix 2.

2. Identify symptoms of pest infestation using the Pest Alert pamphlet and set of slides. Refer to Appendix 3.

3. Detect the pine shoot beetle. Refer to Appendix 4.

4. Collect and label specimens. Refer to the section on conducting visual surveys.

5. How to assemble, place, and service traps. Refer to pages 2.26 - 2.29, and Appendix 12 for illustrations of traps.

6. Fill out a survey worksheet and PPQ Form 391. Refer to the section on conducting visual and trapping surveys. Note that this Manual does not cover how to fill out PPQ Form 391.

Below is a list of resources available in the field to help train survey personnel:

1. Pest Alert pamphlet on the Common Pine Shoot Beetle; USDA Forest Service, Northeastern Area; 1992.

2. Fact sheet on the pine shoot beetle; USDA, APHIS, PPQ; February 1993.

3. VHS video tape: Common Pine Shoot Beetle; Six minute tape covering recognition of the adult beetle--what it looks like, what to look for in the field. The cost is $20.00, payable to the University of Illinois. Write for a copy from:

James E. Appleby
NHS 607 East Peabody
Champaign, IL 61820

4. A Field Guide to Trees and Shrubs, George A. Petrides and Roger Tory Peterson; Peterson's Field Guide Series.

5. The Audubon Society Field Guide to North American Trees; Elbert L. Little; Alfred A Knopf, Inc.

6. A Guide to Field Identification, Trees of North America; C. Frank Brockman; Western Publishing Company, Inc.

7. North American Trees; Richard J. Preston, Jr.; Iowa State University Press.

8. Reader's Digest North American Wildlife, Reader's Digest Association, Inc.

9. State Department publications on identification guides to State trees.

SURVEY
Conduct Visual Surveys

Overview:

The following steps are an overview of the procedures for conducting visual surveys to support the detection and delimiting survey aspects of the Pine Shoot Beetle Program. Survey personnel are responsible for conducting visual surveys. They are the primary users of this section of the Manual.

Step 1: Prepare to Conduct Visual Surveys
Step 2: Contact the Property Owner
Step 3: Select the Number of Pine Trees to Inspect
Step 4: Inspect the Pine Trees
Step 5: Mail Worksheets, Forms, and Suspect Beetles
Step 6: Take Action on Results of the Inspection

Step 1: Prepare to Conduct Visual Surveys:

After receiving information about the survey area from your supervisor, prepare to conduct visual surveys.

1. Using a State or county map, identify sites within the survey area where there will most likely be at least 25 specimens of host material (pine trees). Refer to the examples listed below.

- Christmas tree farms and plantations
- Nurseries
- Ornamental or commercial plantings of pine trees
- Plantings of pine trees at or near saw mills or pulp mills
- Plantings of pine trees at or near gathering yards (central locations where timber operations gather material before distribution)
- Areas of abundant pine trees where there are at least 25 pine trees
- Road side plantings
- Privately grown stands of pine trees (not FS land where FS personnel will be surveying)

Make local contacts and identify local sources to help you find survey sites. For example, State Plant Regulatory Official, Department of Natural Resources, Forest Service, County agent, Cooperative Extension Service specialist, State Highway Department, and owners of Christmas tree farms and plantations, nurseries, saw and pulp mills.

If you are conducting visual surveys for:	Then:
Detection	LOCATE a minimum of 10 sites within a designated high-risk county. The 10 sites should be widely scattered throughout the county.
Delimiting	BEGIN at a designated grid point and LOCATE the nearest site of at least 25 pine trees. (NOTE: The grid points should have been constructed on a map 5 miles apart extending 25 miles outward from the last infested county.)

2. Map out a route to the survey sites.

3. Determine the time needed to conduct the visual surveys. Visual surveys must be conducted during July, August, September, or October.

4. Check the contents of the survey kit to make sure you have the items necessary to conduct visual surveys. (A detailed list of items is under the Survey section of this Manual titled Prepare to Conduct Surveys.)

_____ State or county map with sites identified and a route clearly marked
_____ Lists of local contacts and sources
_____ Supply of pest alert pamphlets
_____ Ball point pens and pencils
_____ Knife and gloves
_____ Vials or jars with alcohol, vial labels
_____ Supply of paper bags
_____ Mailers, boxes, mail labels
_____ Supply of Pine Shoot Beetle Survey Field Data Worksheets
_____ Supply of PPQ Form 391, Specimens for Determination
_____ Pine Shoot Beetle Program Manual

Step 2: Contact the Property Owner:

Once you get to a selected site, contact the property owner or a representative of the property where you want to conduct a visual survey.

1. Give the owner or a representative the following information.

   a. Who--Identify yourself (give a business card if available; temporary employees should be issued a USDA Employee Identification Card).

   b. What--Visually inspect shoots of pine trees. Ask the owner or a representative what kind of pine trees are on the property and the quantity of pine trees. Use Appendix 2 to help with identifying host material. Also, remember that you want to inspect a minimum of 25 pine trees.

   c. Where--Show or explain the location of the pine trees, or ask the owner or a representative where on the property pine trees are located.

d. When--Only this one time, if the results are negative. There may be additional inspections if the results are positive.

e. Why--Give the Pest Alert pamphlet which explains the importance of the Pine Shoot Beetle Regulation and the basis for conducting a nationwide survey plan to detect and delimit the pine shoot beetle.

2. Record initial information on a Pine Shoot Beetle Survey Field Data Worksheet. The remainder of the worksheet will be completed while you conduct the survey. See an example under Appendix 5.

a. Block 1--Check the box for visual survey and the box for either detection or delimiting survey.

b. Blocks 2-4--Fill in.

c. Block 5--Enter the street address of the property.

d. Block 6--Enter the street address of the owner if it is different from the address of the property.

e. Block 7--Enter the type of property, for example, a nursery, tree farm, Christmas tree farm, residence.

f. Block 8--Enter the name of the property owner and the telephone number.

g. Block 9--Enter the date of the survey.

h. Block 10--Enter the time of day.

i. Block 11--If you can identify a section number or a legal description that the property falls within by using the map, then enter the section number or legal description. Otherwise, leave Block 11 blank and let the PPQ OIC record the section number or legal description on their copy.

j. Block 12--If you are using a GPS receive or if you can identify the latitudinal and longitudinal coordinates of the survey site using the map, then enter those coordinates. Otherwise, leave Block 12 blank and let the PPQ OIC record the coordinates on their copy.

k. Block 13--Enter the years the property owner has had the property, and the acres which are used for the type of activity entered in Block 7 (nursery, Christmas trees, residence).

l. Block 14--Check the appropriate weather conditions.

m. Block 15--Enter the kind of pine trees you will be surveying. Use Appendix 2 and other identification guides to help with identifying host material.

n. Blocks 16-22, 24--Leave blank; later you will fill in some of these blocks.

o. Block 23--Draw a map of the property including nearby roads or landmarks.

Step 3: Select the Number of Pine Trees to Inspect:

Select the number of pine trees to inspect. Ideally there should be a minimum of 25 pine trees. Concentrate on inspecting the selected number of pine trees which will be a representative sample of the entire site.

If the total number of pine trees at the site is:	Then inspect the following number of pine trees:
25 - 100	100 percent
101-1,000	At least 100 trees, but no more than 20 percent of trees
More than 1,001	10 percent of trees, but no more than 300 trees

Step 4: Inspect the Pine Trees:

As you enter the property, take an overall view of the situation to see if any symptoms are readily observed in a specific area. First, inspect trees in those areas.*

Inspect the pine trees to find the pine shoot beetle using Appendixes 3 and 4. A summary of the inspection techniques is below.

1. Look all around the trees for symptoms and evidence of pest infestation.

    a. Discolored shoots, needles, or tips of shoots
    b. Entrance holes in the sides of shoots and cream colored pitch tubes
    c. Drooping or broken shoots attached or fallen
    d. Shoots which pop off the tree when briskly brushed

*Field personnel have reported that using "solar-block" or brown tinted glasses enhances the ability to see discolored shoots.

2. If you see a symptom of pest infestation, dissect the shoot to verify the evidence. Evidence would include presence of a clean gallery and/or presence of the pine shoot beetle. Pine shoot beetle galleries are empty (open) and do not contain frass.

a. Cut off the branch with the damaged shoot.
b. Rotate the shoot, looking for entrance holes.
c. Laterally slice the branch open with a knife.
d. Look for galleries and the pine shoot beetle.

If you:	Then:
Find beetles that resemble the pine shoot beetle (Tomicus piniperda)	1. COLLECT the beetles. 2. PLACE the beetles in a vial with alcohol. Put all the beetles found at one site in one vial. 3. CONTINUE on to substep 3.
Find suspected evidence of the pine shoot beetle (clean gallery)	EXPAND your inspection at the site. If after expanding your inspection, you find no beetles, then: 1. REMOVE the damaged shoots. 2. PLACE them in a paper bag. 3. RECORD the location of the survey site on the bag. 4. BRING the damaged shoots back with you to the office for a more careful examination. 5. CONTINUE on to substep 4.
Don't find beetles nor do you find evidence of the pine shoot beetle	CONTINUE on to substep 4.

3. Only for positive inspection results

a. Fill out a vial label in **pencil**, and place the label in the vial with the suspect beetles. Include on the label the following information:

Date of survey
Your name
Kind of pine tree from which collected
Collection Number from a PPQ Form 391 (to be filled out)

CAUTION: Always use a pencil to fill out vial labels. Ink from pens and markers bleeds and dissolves when in contact with water or alcohol.

b. Complete a PPQ Form 391, Specimens for Determination.

c. It is difficult to identify pine to species. Therefore, if you are unable to identify the host pine tree to species or you find a suspect beetle on a host tree other than pine, then cut off a twig from the host tree and place it in a bag. Record on the bag information which will easily connect the host tree specimen with the submitted beetle (i.e., date of survey, your name, collection number from PPQ Form 391). Following guidelines set by your Region, send the host tree specimen off to be identified (i.e., OIC, local taxonomist, designated PPQ botanist or identifier).

4. Record the results of your visual survey on the Pine Shoot Beetle Survey Field Data Worksheet.

a. Block 16--Enter how many trees you inspected.

b. Block 17--Check the condition of the trees, and enter their stand age and height.

c. Block 18--

If you:	Then:
Find beetles	CHECK the box for **positive** results
Find suspected evidence of the pine shoot beetle (clean gallery)	CHECK the box for **negative** results
Did not find beetles nor did you find evidence of the pine shoot beetle	

d. Block 19--

If you:	Then:
Found beetles	• ENTER the number of beetles you collected. • ENTER the number of beetles you will send forward for identification. • ENTER the collection number of a PPQ Form 391 you will complete.
Found suspected evidence of the pine shoot beetle	LEAVE Block 19 blank.
Did not find beetles nor did you find evidence of the pine shoot beetle	

e. Block 20--Print your name, agency, and telephone number.

f. Block 21--Enter the date the survey worksheet will be submitted.

g. Block 24--

If you:	Then:
Found beetles	ENTER any remarks that are appropriate to the site.
Found suspected evidence of the pine shoot beetle	ENTER that you collected damaged shoots.
Did not find beetles nor did you find evidence of the pine shoot beetle	ENTER any remarks that are appropriate to the site.

5. GO to the next site until all sites in the survey area are inspected (return to Step 2).

Step 5: Mail Worksheets, Forms, and Suspect Beetles:

At the end of each survey day, mail all documented and collected results of your visual surveys.

1. Only for positive inspection results:

   a. PACK a box with the following items. You can put more than one vial in a box as long as the accompanying documents are also included in the box.

      (1) Copy of the Pine Shoot Beetle Survey Field Data Worksheet
      (2) PPQ Form 391, Specimens for Determination
      (3) Vial(s) with suspect beetles and label(s)

b. Mail the box by following the directions in the table below.

If you are located in the Region of:	And in the State of:	Then:
Northeast	Illinois Indiana Michigan New York Ohio Pennsylvania	USE **regular** mail to send the specimen to: Steven Passoa, Domestic Identifier USDA, APHIS, PPQ Bldg. 3, Room 123 8995 E. Main Street Reynoldsburg, OH 43068
	A State **other than** listed above	USE **overnight** mail to send the specimen to: Steven Passoa, Domestic Identifier USDA, APHIS, PPQ Bldg. 3, Room 123 8995 E. Main Street Reynoldsburg, OH 43068
Southeast	→	USE **overnight** mail to send the specimen to: James Eldridge, Identifier USDA, APHIS, PPQ Atlanta Perishables Bldg. 1270 Woolman Place Atlanta, GA 30354
Central	→	USE **overnight** mail to send the specimen to: Timm Johnson, Regional Domestic Identifier USDA, APHIS, PPQ Second Floor, Room 202 611 E. 6th Street Austin, TX 78701-3748
Western	→	USE **overnight** mail to send the specimen to the nearest PPQ port identifier.

2. Distribute copies of the Pine Shoot Beetle Survey Field Data Worksheet.

a. For positive inspection results, send a copy with the suspect beetles and a completed PPQ Form 391 to the Regional or port identifier (see previous table).

b. Send a copy to the PPQ, OIC. For positive inspection results, the OIC will send a copy to the State Plant Regulatory Official.

c. Send a copy to your supervisor.

d. Retain a copy for you, the surveyor.

Step 6: Take Action on Results of the Inspection:

Following is a summary of the actions taken as the suspect beetles are identified.

1. The Regional or port identifier will identify the suspect beetle.

NOTE: If the identifier does not have discard authority for the pine shoot beetle, then they will send the specimen and PPQ Form 391 for confirmation to Stephen Passoa, Domestic Identifier for the Northeast Region.

<table>
<tr><th>If the identifier:</th><th>And the origin of the pine shoot beetle is in a:</th><th>Then:</th></tr>
<tr><td rowspan="2">Positively identifies the suspect beetle as the pine shoot beetle (Tomicus piniperda)</td><td>Non-quarantined county</td><td>• NOTIFY immediately the appropriate PPQ, OIC.
• SEND a copy by FAX of PPQ Form 391 to the PPQ, OIC.</td></tr>
<tr><td>Quarantined county</td><td rowspan="2">SEND a copy through normal channels of PPQ Form 391 to the PPQ, OIC.</td></tr>
<tr><td>Determines that the suspect beetle is not the pine shoot beetle</td><td>→</td></tr>
</table>

2. The PPQ, OIC will notify the following personnel either directly or through the Region by telephone, FAX, or electronic mail.

a. The Domestic and Emergency Operations staff in Hyattsville

b. The survey personnel through their supervisors

SURVEY
Conduct Trapping Surveys

Overview:

The following steps are an overview of the procedures for conducting trapping surveys to support the detection and delimiting survey aspects of the pine shoot beetle program.

Step 1:	Prepare to Conduct Trapping Surveys
Step 2:	Contact the Property Owner
Step 3:	Set Up and Place Traps
Step 4:	Mail Survey Worksheet
Step 5:	Set a Schedule for Servicing Traps
Step 6:	Service Traps
Step 7:	Mail Survey Worksheets, Forms, and Suspect Beetles
Step 8:	Remove Traps

Step 1: Prepare to Conduct Trapping Surveys:

After receiving information about the survey area from your supervisor, prepare to conduct trapping surveys.

1. Using a State or county map, identify sites within the survey area where there will most likely be at least 25 specimens of host material (pine trees). Refer to the examples listed below:

- Christmas tree farms and plantations
- Nurseries
- Ornamental or commercial plantings of pine trees
- Saw mills, pulp mills
- Gathering yard (central location where timber operations gather material before distribution)
- Areas of abundant pine trees where there is at least 25 pine trees
- Roadside planting
- Privately grown stands of pine trees, not U.S. Forest land

Make local contacts and identify local sources to help find survey sites. For example, State Plant Regulatory Official, Department of Natural Resources, Forest Service, county agent, Cooperative Extension Service specialist, State highway department, and owners of Christmas tree farms and plantations, nurseries, saw and pulp mills.

If you are conducting trapping surveys for:	Then:
Detection	LOCATE a minimum of 10 sites within a designated high-risk county. The 10 sites should be widely scattered around the county
Delimiting	BEGIN at a designated grid point and LOCATE the nearest site of at least 25 pine trees

2. Map out a route to the survey sites.

3. Determine the time needed to conduct the trapping surveys. Traps should be placed in survey areas during the late winter, with all traps in place no later than March 1 in southern areas and March 15 in northern areas. All traps are to be in place before the first captures of beetles are expected, which depends on temperature. The pine shoot beetle will begin flying when daytime temperatures exceed 12°C (53.6°F) for several hours.

4. Check the contents of the survey kit to make sure you have the items necessary to conduct trapping surveys. (A detailed list of items is under the Survey section of this manual titled Prepare to Conduct Surveys.) Also, include a State or county map with the sites identified and a route clearly marked. Necessary items include:

_____ Lists of local contacts and sources
_____ Supply of pest alert pamphlets
_____ Ballpoint pens, pencils, permanent markers
_____ Knife and gloves
_____ Traps, lures, and a supply of replacement parts
_____ String, wire, rebars, and/or wooden stakes

_____ Identification and number labels for traps
_____ Forceps and sorting pan
_____ Detergent and water solution in 2 liter bottle
_____ Vials or jars with alcohol, vial labels
_____ Mailers, boxes, mail labels
_____ Supply of Pine Shoot Beetle Survey Field Data Worksheets
_____ Supply of PPQ Form 391, Specimens of Determination
_____ Pine Shoot Beetle Program Manual
_____ GPS receiver (optional)

5. Assemble the traps, if necessary. Refer to Appendix 12 for illustrations of the traps. Assign consecutive numbers for the traps within each survey area.

Step 2: Contact the Property Owner:

Once you get to a selected site, contact the property owner or a representative of the property where you want to conduct a trapping survey.

1. Give the owner or a representative the following information:

   a. Who--Identify yourself (give a business card, if available).

   b. What--Place a trap among pine trees. Ask the owner or a representative what kind of pine trees are on the property and the quantity of pine trees. Use Appendix 2 to help with identifying host material. Also, remember that you want to place a trap where there is a minimum of 25 pine trees.

   c. Where--Show or explain the location of the pine trees, or ask the owner or a representative where on the property pine trees are located.

   d. When--Explain the survey schedule. You will return to service the trap at a maximum of every 2 weeks. Then, you will remove the trap on approximately June 1.

   e. Why--Give the pest alert pamphlet which explains the importance of the Pine Shoot Beetle Regulation and the basis for conducting a nationwide survey to detect and delimit the pine shoot beetle.

2. Record initial information on a Pine Shoot Beetle Survey Field Data Worksheet. The remainder of the worksheet will be completed while you conduct the survey. See an example in Appendix 5.

a. Block 1--Check the box for the type of trap and the box for either detection or delimiting survey.

b. Blocks 2-4--Fill in.

c. Block 5--Enter the street address of the property.

d. Block 6--Enter the street address of the owner if it is different than the address of the property.

e. Block 7--Enter the type of property, for example, a nursery, tree farm, Christmas tree farm, residence.

f. Block 8--Enter the name of the property owner and the telephone number.

g. Blocks 9 and 10--Leave blank.

h. Block 11--If you can identify a section number where the property falls within using the map, then enter the section number. Otherwise, leave Block 11 blank and let the PPQ OIC record the section number on their copy.

i. Block 12--If you are using a GPS receiver or if you can identify the latitudinal and longitudinal coordinates of the survey site using the map, then enter those coordinates. Otherwise, leave Block 12 blank and let the PPQ OIC record the coordinates on their copy.

j. Block 13--Enter the years the property owner has had the property, and the acres which are used for the type of activitiy entered in Block 7 (nursery, Christmas trees, residence).

k. Block 14--Leave blank.

l. Block 15--Enter the kind of pine trees where you will be placing a trap.

m. Block 16--Leave blank.

n. Blocks 17-22, 24--Leave blank; later you will fill in some of these blocks.

o. Block 23--Draw a map of the property including nearby roads or landmarks.

Step 3--Set Up and Place the Traps:

1. If not done previously, assemble the trap. See Appendix 12 for illustrations of the traps.

2. Place lure in the trap. For the Lindgren® and Theysohn® traps: 2 vapona strips; and 4, 3-component dispensers that include 2, 16 ml bottles of (+) a-pinene; 1, 16 ml bottle of 3-carene; and 1, 16 ml bottle of terpinolene.

3. Complete identification and numbering labels for the trap. Use a numbering scheme set up by your office or work unit.

4. Place the trap within a stand of pine trees.

NOTE: Do not place the trap where there is a lot of freshly cut material or brood material, because it will compete with the trap.

The bottom of the traps should be placed as close to the ground as possible: within 3 inches.

Also, the Lindgren®and Theysohn®traps should be positioned approximately 2 inches above the ground to prevent ants and other predators from entering the trap.

5. Once a trap is in place, complete a Pine Shoot Beetle Field Data Survey Worksheet and plot the location of the trap on the map.

a. Block 17--Check the condition of the pine trees where you placed the trap, and enter their stand age and height.

b. Blocks 18 and 19--Leave blank.

c. Blocks 20 and 21--Print your name, agency, telephone number, and date when the trap was set and placed.

d. Block 22--On the first row, enter the date when the trap was set and its condition.

e. Block 24--Enter any remarks that may help future survey activities.

f. Plot the location of the trap on the map.

6. Go to the next site until all traps in the survey area are placed (return to step 2).

Step 4: Mail Survey Worksheets:

At the end of each survey day, distribute the copies of the Pine Shoot Beetle Survey Field Data Worksheet.

1. Send a copy to the PPQ OIC.

2. Keep the remaining copies intact, and use the survey worksheet to record the results of servicing the trap in Block 22.

Step 5: Set a Schedule for Servicing Traps:

After all your traps are in place, set up a schedule for servicing the traps in a minimum of 2 week intervals.

All traps are to be in place no later than March 1 in southern areas and March 15 in northern areas, and are to be serviced at a minimum of every 2 weeks until approximately June 1.

Step 6: Service Traps:

1. Plan your route before leaving the office to eliminate overlapping travel. Have a State of county map with the traps plotted and a route clearly marked.

2. Gather all the items you will need to service traps. (A detailed list of items is in the Introduction to the Survey section of this manual.) Necessary items include:

_____ Trap replacement parts
_____ Originally completed Pine Shoot Beetle Survey Field Data Worksheet
_____ Sorting pan, detergent solution, forceps
_____ PPQ Form 391
_____ Vials or jars with alcohol, vial labels
_____ Boxes, mail labels
_____ PIne Shoot Beetle Program Manual

3. Service the traps.

a. Enter the date you are servicing the trap in Block 22 of the Pine Shoot Beetle Survey Field Data Worksheet.

b. Look at the overall condition of the trap. Replace badly damaged or missing traps. Enter the condition of the trap in Block 22 of the survey worksheet.

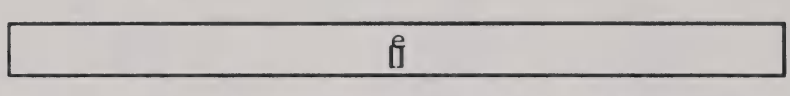
c. Look for suspect beetles in the collection container of the trap.

If you:	Then:
Find beetles present	CONTINUE on to substep 3.d.
Do not find beetles present	1. CLEAN out any foreign debris in the collection bottle. 2. RETURN to the trap in 2 weeks.

d. Set out the sorting pan and pour the detergent and water solution into it.

e. Empty the contents of the collection container from the trap into the sorting pan. Screw the collection container back on to the trap.

f. Rough sort the collection to remove large beetles and specimens which are not beetles. Throw away anything larger than the illustration below unless instructed otherwise by your region.



g. Place the remaining suspect beetles in a vial or jar with alcohol.

h. Fill out a vial label in **pencil**, and place the label in the vial with the suspect beetles. Include on the label the following information:

- Date of servicing
- Your name
- Kind of pine trees around the trap(s)
- Collection number from a PPQ Form 391 (to be filled out)

CAUTION: Always use a pencil to fill out vial labels. Ink from pens and markers bleeds and dissolves when in contact with water or alcohol.

i. Complete a PPQ Form 391, Specimens for Determination.

j. Enter the collection number on the PPQ Form 391 on the survey worksheet in Block 22, along with the number of adult beetles collected and the number shipped.

4. Go to the next site until all traps in the survey area are serviced (return to substep 3).

Step 7: Mail Survey Worksheets, Forms, and Suspect Beetles:

At the end of each survey day, mail all documented and collected results of your trapping surveys.

1. Only for positive inspection results:

   a. Pack a box with the following items. You can put more than one vial in a box as long as the accompanying documents are also included in the box.

      (1) PPQ Form 391, Specimens for Determination
      (2) Vial with suspect beetles and label

b. Mail the box following the table below.

If you are located in the Region of:	And in the State of:	Then:
Northeast	Illinois Indiana Michigan New York Ohio Pennsylvania	Use **regular** mail to send the specimen to: Steven Passoa, Domestic Identifier USDA, APHIS, PPQ Bldg. 3, Room 123 8995 E. Main Street Reynoldsburg, OH 43068
	A State **other than** listed above	Use **overnight** mail to send the specimen to: Steven Passoa, Domestic Identifier USDA, APHIS, PPQ Bldg. 3, Room 123 8995 E. Main Street Reynoldsburg, OH 43068
Southeast	→	Use **overnight** mail to send the specimen to: James Eldridge, Identifier USDA, APHIS, PPQ North Cargo Building 3400 N. Interloop Road Hapeville, GA 30354
Central	→	Use **overnight** mail to send the specimen to: Timm Johnson, Regional Domestic Identifier USDA, APHIS, PPQ Second Floor, Room 202 611 E. 6th Street Austin, TX 78701-3748
Western	→	Use **overnight** mail to send the specimen to the nearest PPQ port identifier

Step 8: Remove Traps:

At the end of the survey period, remove all placed traps. Look for missing traps, and examine those found for the pine shoot beelte.

1. Remove traps from sites.

   a. Look for the trap number. Rewrite the number if it has faded. This will help you identify the traps later, if necessary.

   b. Record the date the trap was removed in Block 22 of the survey worksheet.

   c. Place the traps in a bag.

   d. Remove all the items used to set it (string, wire, rebars, and wooden stakes).

2. Check the traps for suspect beetles. Make a final check for suspect beetles in all the collected traps. If you find suspect beetles, follow the steps for submitting suspect beetles.

3. Store traps, if applicable.

4. Distribute copies of the survey worksheets.

   a. Send a copy to the PPQ, OIC. For positive inspection results, the OIC will send a copy to the State Plant Regulatory Official.

   b. Send a copy to your supervisor.

   c. Retain a copy for you, the surveyor.

SURVEY
Report Survey Results

The National Agricultural Pest Information System (NAPIS) is the official mechanism to store, manage, and retrieve summarized data from the pine shoot beetle survey for multistate, regional and national use. NAPIS is used for maintaining a historical record and for summarizing the results of the trapping and visual survey seasons. The raw survey data should be managed within the State, and should include dates and locations of individual survey activities as well as the species of host trees present on survey sites.

Each State should complete at least one NAPIS data input worksheet for each county. Enter this record(s) after all survey results have been counted, but no later than December 1 each year.

The PPQ Officer in Charge (OIC) in each State must insure that the data is entered into NAPIS by the State Survey Coordinator or some other authorized party. The OIC is responsible for monitoring the data accuracy. Therefore, after the survey data is entered, the OIC reviews the data and compares the summarized data to the survey records. The OIC immediately has errors corrected.

A data entry worksheet is in Appendix 6 and can be reproduced for field use. The worksheet is designed to provide all of the information needed in the correct format. Appendix B of the NAPIS User Guide explains the one-line entry, input format of the restructured NAPIS database. The State Survey Coordinators or other authorized parties can use these guidelines to complete the data entry of the survey results.

REGULATORY
Introduction

Purpose:

Facilitate the movement of regulated articles from and through quarantined areas to contain the spread of the pine shoot beetle. A list of quarantined areas is in Appendix 7. Regulated articles are as follows:

- Cut, Christmas trees of pine (Pinus spp.)
- Logs and lumber with bark attached of pine (Pinus spp.)
- Nursery stock of pine (Pinus spp.)

Additionally, the regulated articles must be eligible for interstate movement under all other applicable Federal, domestic plant quarantines and regulations.

Items Needed:

The following listed items are needed to conduct inspections of regulated articles.

- State and County maps
- Disposal order stamp (optional for cut, pine Christmas trees)
- Gloves
- Knife
- Magnifying lens (optional)
- Supply of Certificates (PPQ Form 540)
- Supply of Compliance Agreements (PPQ Form 519)
- Supply of Limited Permits (PPQ Form 530)
- Supply of plastic bags
- Ball point pen
- Supplies related to supervising treatments of logs and lumber and Christmas trees

Safety:

- Take all precautions identified in the Treatment Manual related to supervising methyl bromide fumigations and cold treatments.
- Growers/shippers are responsible for standing up cut Christmas trees as they are inspected and for unwrapping Christmas trees that have been wrapped or baled prior to inspection.
- Wear proper attire (i.e., rubber pants, boots) when inspecting Christmas trees in inclement weather.

REGULATORY
Reference Section--Christmas Trees of Pine (Pinus spp.)

Overview:

The following steps are an overview of the regulatory procedures used to issue Limited Permits, Certificates, and Compliance Agreements for shipments of cut, pine Christmas trees originating in quarantined areas. A list of quarantined areas is in Appendix 7.

Step 1:	Obtain Information From the Grower/Shipper
Step 2:	Schedule an Inspection
Step 3:	Select the Number of Pine Trees to Inspect
Step 4:	Inspect the Pine Trees
Step 5:	Take Aaction on Pine Christmas Trees

During October, November, and December cut, pine Christmas trees originating **outside** any quarantined area can move through quarantined areas without a Certificate or Limited Permit under the following conditions--the point of origin must be indicated on the waybill, invoice, or other shipping document which accompanies the shipment; also, the shipment must move through quarantined areas without stopping except for drop-off loads, refueling, or traffic conditions such as traffic lights or stop signs.

Step 1: Obtain Information From the Grower/Shipper:

Obtain the following information from a grower/shipper upon their request for a Limited Permit for a shipment or a Compliance Agreement for a premises inspection:

1. Location of the premises or the cut trees.

2. Destination for shipments of cut trees.

3. Characteristics of the trees.

   a. What kind of trees are going to be shipped?

NOTE: Only Christmas trees of pine (Pinus spp.) are regulated. The most popular kind of pine trees used as Christmas trees are white pine, Scotch pine, and Virginia pine.

   b. Are the trees painted (color-enhanced) or unpainted (natural)?

4. Number of trees on the premises or in the shipment.

Step 2: Schedule an Inspection:

Schedule an inspection of the trees keeping in mind the following considerations:

1. The grower/shipper must notify the PPQ Officer or State cooperator at least 48 hours in advance of the movement.

2. If the Christmas trees have been cut, require the grower/shipper to provide a person during inspection to stand the trees up as they are selected for inspection.

Step 3: Select the Number of Pine Trees to Inspect:

Using the following tables, select the number of pine trees which will be inspected randomly using the total number of pine trees on the premises or in the shipment, and whether the trees are painted (color enhanced) or unpainted (natural).

NOTE: If a shipment of trees is a mixture of painted and unpainted ones, use the table for painted trees to determine the number of trees to inspect.

Table 1: Number of **painted** (color enhanced), pine Christmas trees to be inspected

If the total number of **painted**, pine Christmas trees is:	Then randomly select the following number of trees for inspection:
1-72	All
73-100	73
101-200	96
201-300	106
301-400	111
401-500	115
501-600	117
601-700	119
701-800	120
801-900	121
901-1,000	122
1.001-2,000	126
2,001-3,000	127
3,001-5,000	128
5,001-10,000	129
10,001 or more	130

Table 2: Number of **unpainted** (natural), pine Christmas trees to be inspected

If the total number of **unpainted**, pine Christmas trees is:	Then randomly select the following number of trees for inspection:
1-57	All
58-100	58
101-200	69
201-300	75
301-400	77
401-500	79
501-600	80
601-700	81
701-1,000	82
1,001-3,000	84
3,001-10,000	85
10,001 or more	86

Step 4: Inspect the Pine Trees:

Inspect the pine trees for evidence of infestation by the pine shoot beetle. Refer to Appendix 3 on how to inspect pine trees for the pine shoot beetle. A summary of the inspection techniques is below.

1. Randomly select each pine tree as you conduct the inspection.

NOTE: If the trees have been wrapped/baled, require the grower/shipper to unwrap the selected trees as you inspect them.

NOTE: If the trees have been cut, require the grower/shipper to stand up the selected trees as you inspect them.

HINT: If the shipment is a mixture of pine trees (Scotch, white) then focus your inspection on Scotch pine which is the preferred host of the pine shoot beetle.

HINT: If the shipment is a mixture of tall and short trees, choose a majority of tall trees to inspect.

2. While concentrating on the upper part of the tree, look all around it for symptoms and evidence of pest infestation.

a. Discolored shoots, needles, or tips of shoots
b. Entrance holes in the sides of shoots and cream colored pitch tubes
c. Drooping or broken shoots attached or fallen
d. Shoots which pop off the tree when briskly brushed

3. If you see a symptom of pest infestation, dissect the shoot to verify the evidence. Evidence would include presence of a clean gallery (empty (open) and does not contain frass) and/or presence of the pine shoot beetle.

a. Cut off the branch with the damaged shoot.
b. Rotate the shoot, looking for entrance holes.
c. Horizontally slice the branch open with a knife.
d. Look for galleries and the pine shoot beetle.

Step 5: Take Action on Pine Christmas Trees:

Take action on inspected, pine Christmas trees originating in quarantined areas.

1. Based on the results of your inspection, determine whether to issue a Limited Permit, a Compliance Agreement, or a Certificate; or to reject the shipment.

If you find:	Then:
Evidence of infestation in any one inspected tree which is the presence of: • a clean gallery, and/or • the pine shoot beetle	• NOTIFY the grower/shipper of the inspection results • PROVIDE the option of cold treatment of -20.6°C (-5°F) for 1 hour **NOTE:** Damage to Christmas trees may occur, particularly if they are held for long periods in a cold, desiccative (dry) condition. • GO to Step 5-2
No evidence of infestation by the pine shoot beetle in any inspected tree	• ISSUE a Limited Permit (PPQ Form 530) or a Compliance Agreement (PPQ Form 519). GO to Appendix 8 on how to complete Limited Permits or Appendix 9 on how to issue and monitor Compliance Agreements. • MONITOR holders of Compliance Agreements on an "as needed" basis by PPQ OIC's or by the State cooperators in the State of origin.

2.

If the grower/shipper chooses:	Then:
To treat the shipment	• SUPERVISE the cold treatment of -20.6°C (-5°F) for 1 hour. **NOTE:** Start counting time when the air temperature in the refrigeration unit reads -20.6°C (-5°F) in the center of the load. • ISSUE a Certificate (PPQ Form 540) attesting that the Christmas trees have been treated. GO to Appendix 10 on how to complete Certificates.
Not to treat	• REJECT the shipment. DO NOT ISSUE a Limited Permit or a Compliance Agreement. • COLLECT evidence (optional) • REPORT rejection to your supervisor

NOTE FOR STATES OF DESTINATION: If a Limited Permit (PPQ Form 530) was issued in the State of origin, monitor the disposal requirements by ensuring that the responsible party disposes of the unsold Christmas trees by one of the following methods:

- burning
- chipping
- fumigating with methyl bromide

REGULATORY
Reference Section--Logs and Lumber With Bark of Pine (Pinus spp.)

Overview:

The following steps are an overview of the regulatory procedures used to facilitate the interstate movement of logs and lumber with bark of pine (Pinus spp.).

NOTE: Presently, there are no effective inspection procedures for detecting the pine shoot beetle in logs and lumber with bark. Therefore, inspection may not be used as the basis for certifying logs and lumber.

Step 1:	Determine the Kind of Logs or Lumber Being Shipped
Step 2:	Determine if the Pine Logs or Lumber Has Bark Attached
Step 3:	Determine the Origin of the Shipment
Step 4:	Take Action on Shipments of Pine Logs or Lumber Originating in Non-Quarantined Areas
Step 5:	Determine the Final Destination and Movement of Pine Logs or Lumber
Step 6:	Take Action on Shipments of Pine Logs or Lumber Originating in Quarantined Areas

Step 1: Determine the Kind of Logs or Lumber Being Shipped:

Determine if the kind of logs or lumber being shipped is pine (Pinus spp.).

If the logs or lumber is:	Then:
Pine (Pinus spp.)	GO to Step 2.
Of a kind **other than** pine	NO action is required.

Step 2: Determine if the Pine Logs or Lumber Has Bark Attached:

Determine if the pine logs or lumber being shipped has bark attached.

If the pine logs or lumber is:	Then:
Without bark (this includes rough cut lumber which has been square-edged (bark removed))	NO action is required.
With bark attached	GO to Step 3.

Step 3: Determine the Origin of the Shipment:

Determine if the shipment of pine logs or lumber originates in a quarantined area. Refer to Appendix 7 for a list of quarantined areas.

If the origin is in a:	Then:
Non-quarantined area	GO to Step 4.
Quarantined area	GO to Step 5.

Step 4: Take Action on Shipments of Pine Logs or Lumber Originating in Non-Quarantined Areas:

Take action on shipments of pine logs or lumber originating in non-quarantined areas when they are moving through quarantined areas to destinations outside quarantined areas only if the shipment does not comply with the regulation. Monitor shipments to determine if growers/shippers are following conditions of movement to safeguard the shipments.

<table>
<tr><th>If a shipment is moving during:</th><th>And the ambient air temperature is:</th><th>Then:</th></tr>
<tr><td rowspan="2">February
March
April
May</td><td>Above 10°C (50°F)</td><td>Require the following conditions of movement to safeguard the shipment:
• SHIP in an enclosed vehicle or a completely covered one (such as with plastic, canvas, or other closely woven cloth) to prevent access by the pine shoot beetle.
• MOVE through the quarantined areas without stopping except for dropoff loads, refueling, or traffic conditions such as traffic lights or stop signs.
• INDICATE the point of origin on the accompanying paperwork.</td></tr>
<tr><td>At or below 10°C (50°F)</td><td rowspan="2">Require the following conditions of movement to safeguard the shipment:
• MOVE through the quarantined areas without stopping except for dropoff loads, refueling, or traffic conditions.
• INDICATE the point of origin on the accompanying paperwork.</td></tr>
<tr><td>June
July
August
September
October
November
December
January</td><td>→</td></tr>
</table>

Step 5: Determine the Final Destination and Movement of Pine Logs or Lumber:

Determine the final destination and movement of pine logs or lumber originating in quarantined areas.

If the destination is:	And the shipment is moving through:	Then:
In a quarantined area	Quarantined areas	NO action is required
	Non-quarantined areas	• ISSUE a Limited Permit (PPQ Form 530). GO to Appendix 8 on how to complete Limited Permits. • REQUIRE the following conditions of movement to safeguard the shipment: --Ship in an enclosed vehicle --Move through the non-quarantined areas without stopping except for refueling or traffic conditions such as traffic lights or stop signs --Verify that the destination is within a quarantined area
Outside the quarantined areas	→	GO to Step 6

Step 6: Take Action on Shipments of Pine Logs or Lumber Originating in Quarantined Areas:

Take action on shipments of pine logs or lumber originating in quarantined areas which are destined to non-quarantined areas.

<table>
<tr><th>If the logs or lumber:</th><th>Then:</th></tr>
<tr><td>Has been treated at the point of origin under the supervision of PPQ with the approved method of fumigation*</td><td>ISSUE a Certificate (PPQ Form 540) attesting that the logs or lumber has been treated in accordance with 7CFR 301.50-10. GO to Appendix 10 on how to complete Certificates.</td></tr>
<tr><td>Will be treated at a specified destination under the supervision of PPQ

Is moving to a specified destination for specified handling, processing, or utilization which will not result in the spread of the pine shoot beetle (handling, processing, or utilization would include a method to negate fumigation, such as debarking on arrival and the proper disposal of the bark (immediate burning or incineration, or immediate chipping and cooking at an approved pulp mill))**</td><td>• ISSUE a Limited Permit (PPQ Form 530) or a Compliance Agreement (PPQ Form 519) for the specified destination which must be preapproved by PPQ to ensure the proper treatment, handling, processing, or utilization of the logs or lumber within 24 hours. GO to Appendix 8 on how to complete Limited Permits or Appendix 9 on how to issue and monitor Compliance Agreements.
• REQUIRE the following conditions of movement to safeguard the shipment:
--Ship in an enclosed vehicle
--Move through the non-quarantined areas without stopping except for refueling or traffic conditions such as traffic lights or stop signs.
• SUPERVISE the treatment or VERIFY the handling, processing, or utilization to be done at destination within 24 hours.</td></tr>
</table>

*Methyl bromide at normal atmospheric pressure with 48 g/m^3 (3 lbs./1,000 ft^3) for 16 hours at 21°C (70°F) or above, OR with 80 g/m^3 (5 lbs./1,000 ft^3) for 16 hours at 4.5-20.5°C (40-69°F)

**Compliance Agreements may be issued for an operator at specified destinations once they are approved to handle, process, or utilize the commodity. The OIC in the State of origin is to contact the OIC in the State of destination prior to movement of the logs or lumber to ensure that the specified destination has been approved.

REGULATORY
Reference Section--Nursery Stock of Pine (Pinus spp.)

Overview:

The following steps are an overview of the regulatory procedures used to facilitate the interstate movement of pine (Pinus spp.) nursery stock. For the purposes of the Pine Shoot Beetle Regulation, nursery stock includes woody plants, shrubs, rooted trees, balled and burlapped Christmas trees, seedlings, and greenhouse-grown pines such as bonsai.

Step 1:	Determine the Kind of Nursery Stock Being Shipped
Step 2:	Determine the Origin of the Shipment
Step 3:	Take Action on Shipments of Pine Nursery Stock Originating in Non-Quarantined Areas
Step 4:	Determine What Type of Pine Nursery Stock Is Being Shipped
Step 5:	Determine the Final Destination and Movement of the Pine Nursery Stock
Step 6:	Inspect 100 Percent of the Pine Nursery Stock
Step 7:	Issue a Certificate for Inspected Pine Nursery Stock Originating in Quarantined Areas

Step 1: Determine the Kind of Nursery Stock Being Shipped:

Determine if the shipment of nursery stock is pine (Pinus spp.).

If the nursery stock is:	Then:
Pine (Pinus spp.)	GO to Step 2.
Of a kind **other than** pine	NO action is required.

Step 2: Determine the Origin of the Shipment:

Determine if the shipment of pine nursery stock originates in a quarantined area. Refer to Appendix 7 for a list of quarantined areas.

If the origin is in a:	Then:
Non-quarantined area	GO to Step 3.
Quarantined area	GO to Step 4.

Step 3: Take Action on Shipments of Pine Nursery Stock Originating in Non-Quarantined Areas:

Take action on shipments of pine nursery stock originating in non-quarantined areas when they are moving through quarantined areas to destinations outside quarantined areas only if the shipment does not comply with the regulation. Monitor shipments to determine if growers/shippers are following conditions of movement to safeguard the shipment.

<table>
<tr><th>If a shipment is moving during:</th><th>And the ambient air temperature is:</th><th>Then:</th></tr>
<tr><td rowspan="2">June
July
August
September
October</td><td>Above 10°C (50°F)</td><td>REQUIRE the following conditions of movement to safeguard the shipment:
• SHIP in an enclosed vehicle or a completely covered one (such as with plastic, canvas, or other closely woven cloth) to prevent access by the pine shoot beetle.
• MOVE through the quarantined areas without stopping except for dropoff loads, refueling, or traffic conditions such as traffic lights or stop signs.
• INDICATE the point of origin on the accompanying paperwork.</td></tr>
<tr><td>At or below 10°C (50°F)</td><td rowspan="2">REQUIRE the following conditions of movement to safeguard the shipment:
• MOVE through the quarantined areas without stopping except for dropoff loads, refueling, or traffic conditions.
• INDICATE the point of origin on the accompanying paperwork.</td></tr>
<tr><td>January
February
March
April
May
November
December</td><td>→</td></tr>
</table>

Step 4: Determine What Type of Pine Nursery Stock Is Being Shipped:

Determine what type of pine nursery stock is in the shipment which originates in a quarantined area.

If the pine nursery stock is:	Then:
Pine seedlings less than 24 inches tall	• ISSUE a Certificate (PPQ Form 540) or Compliance Agreement (PPQ Form 519) based on negative results of a general inspection. GO to Appendix 10 on how to complete Certificates or to Appendix 9 on how to issue and monitor Compliance Agreements. • MONITOR holders of Compliance Agreements on an "as needed" basis by PPQ OIC's or by the State cooperators in the State of origin.
Greenhouse-grown pine, such as bonsai	• ISSUE a Certificate (PPQ Form 540) or Compliance Agreement (PPQ Form 519) based on negative results of a general inspection and verification that the greenhouse is screened to prevent entry of the pine shoot beetle. GO to Appendix 10 on how to complete Certificates or to Appendix 9 on how to issue and monitor Compliance Agreements. • MONITOR holders of Compliance Agreements on an "as needed" basis by PPQ OIC's or by the State cooperators in the State of origin.
A type **other than** listed above	GO to Step 5.

Step 5: Determine the Final Destination and Movement of the Pine Nursery Stock:

Determine the final destination and movement of pine nursery stock originating in quarantined areas.

If the destination is:	And the shipment is moving through:	Then:
In a quarantined area	Quarantined areas	NO action is required
	Non-quarantined areas	• ISSUE a Limited Permit (PPQ Form 530). GO to Appendix 8 on how to complete Limited Permits. • REQUIRE the following conditions of movement to safeguard the shipment: --Ship in an enclosed vehicle. --Move through the non-quarantined areas without stopping except for refueling or traffic conditions such as traffic lights or stop signs. --Verify that the destination is within a quarantined area.
Outside the quarantined areas	→	• SCHEDULE an inspection of the nursery stock keeping in mind the grower/shipper must notify you at least 48 hours in advance of the movement. • GO to Step 6.

Step 6: Inspect 100 Percent of the Pine Nursery Stock :

Inspect the pine nursery stock for evidence of infestation by the pine shoot beetle. Pine nursery stock includes balled and burlapped, container grown or pine seedlings greater than 24 inches tall.

Refer to Appendix 3 on how to inspect pine trees for the pine shoot beetle. A summary of the inspection techniques is below.

1. Select all the trees for inspection. Inspect 100 percent of the shoots of all the trees in the shipment.

2. Look at all branches for symptoms and evidence of pest infestation.

   a. Discolored shoots, needles, or tips of shoots
   b. Entrance holes in the sides of shoots and cream colored pitch tube
   c. Drooping or broken shoots attached or fallen
   d. Shoots which pop off the tree when briskly brushed

3. If you see a symptom of pest infestation, dissect the shoot to verify the evidence. Evidence would include presence of a clean gallery and/or presence of the pine shoot beetle. Pine shoot beetle galleries are empty (open) and do not contain frass.

   a. Cut off the branch with the damaged shoot.
   b. Rotate the shoot looking for entrance holes.
   c. Horizontally slice the branch open with a knife.
   d. Look for galleries or the pine shoot beetle.

Step 7: Issue a Certificate for Inspected, Pine Nursery Stock Originating in Quarantined Areas:

Issue a Certificate for inspected, pine nursery stock originating in quarantined areas which are destined to non-quarantined areas.

1. Based on the results of your inspection, determine whether to issue a Certificate for the entire shipment, or to reject individual trees.

If you find:	Then:
Evidence of infestation in any one tree which is the presence of: • a clean gallery, and/or • the pine shoot beetle	• NOTIFY the grower/shipper of the inspection results. • PROVIDE the following options –Reject the infested trees–they can sell infested trees within the quarantined area. –Treat the infested trees with a cold treatment of -20.6°C (-5°F) for 1 hour. Advise the grower/shipper that because of the uncertain effect of cold treatment on pine nursery stock, APHIS assumes no liability for possible loss or damage to the nursery stock as a result of the cold temperature treatment. • GO to Step 7-2.
No evidence of infestation by the pine shoot beetle in any inspected tree	ISSUE a Certificate (PPQ Form 540) for the entire shipment. GO to Appendix 10 on how to complete Certificates.

2.

If the grower/shipper chooses:	Then:
To treat the infested trees	1. ADVISE the grower/shipper that because of the uncertain effect of cold treatment on pine nursery stock, APHIS assumes no liability for possible loss or damage to the nursery stock as a result of the cold temperature treatment. 2. SUPERVISE the cold treatment of -20.6°C (-5°F) for 1 hour. **NOTE:** Start counting time when the air temperature in the refrigeration unit reads -20.6°C (-5°F) in the center of the load. 3. ISSUE a Certificate (PPQ Form 540) attesting that the nursery stock has been treated. GO to Appendix 10 on how to complete Certificates.
Not to treat the infested trees	1. REJECT the infested trees. 2. ISSUE a Certificate (PPQ Form 540) for the pine nursery stock found free from the pine shoot beetle. GO to Appendix 10 on how to complete Certificates. 3. REPORT to your supervisor the number of trees rejected.

NOTE FOR GROWERS/SHIPPERS: Because of the uncertain effect of cold treatment on pine nursery stock, APHIS assumes no liability for possible loss or damage to the nursery stock as a result of the cold temperature treatment.

APPENDIX 1
Definitions, Abbreviations, and Terms

Brood material--Dead trees, logs, tree stumps, pine chips and nuggets, firewood of pine (Pinus spp.) which have been cut within the last year.

Certificate--A document in which an inspector, or person operating under a Compliance Agreement, affirms that a specified regulated article is free of pine shoot beetle and may be moved interstate to any destination.

Compliance Agreement--A written agreement between APHIS and a person engaged in processing, growing, handling, utilizing, or moving regulated articles, in which the person agrees to comply with the provisions presented in this manual.

Infestation--The presence of the pine shoot beetle or the existence of circumstances that make it reasonable to believe that the pine shoot beetle is present.

Interstate--From any State into or through any other State.

Limited Permit--A document which is issued by an inspector affirming that the regulated article identified on the document is eligible for interstate movement in accordance with the conditions listed in this manual only to a specified destination(s) and only in accordance with specified conditions. Persons operating under Compliance Agreements may issue Limited Permits.

Moved (move, movement)--Shipped, offered for shipment, received for transportation, transported, carried, or allowed to be moved, shipped, transported, or carried.

Person--Any association, company, corporation, firm, individual, joint stock company, partnership society, or other entity.

Pine nursery stock--All Pinus spp. woody plants, shrubs, and rooted trees, including dug (balled and burlapped) Christmas trees, and greenhouse grown pine, such as bonsai.

Pine shoot beetle--An insect known as Tomicus piniperda, in any stage of development. It is a highly destructive pest of pine trees. Information about the life cycle and characteristics of the pine shoot beetle are detailed in Appendix 4 of this manual.

Prothorax--The anterior division of the thorax of an insect, bearing the first pair of legs.

Quarantined area--Any State, or any portion of a State listed in Appendix 7 of this manual where the pine shoot beetle has been found by an inspector, areas in which the Agency has reason to believe the pine shoot beetle is present, and areas considered necessary to quarantine because of their inseparability for quarantine enforcement purposes from localities where the pine shoot beetle has been found.

Regulated article--Christmas trees and nursery stock of pine (Pinus spp.); logs and lumber with bark attached of pine (Pinus spp.).

Stand--A continuous growth of pine trees.

State--The District of Columbia, Puerto Rico, the Northern Mariana Islands, or any State, territory, or possession of the United States.

APPENDIX 2
Identification of Host Plants

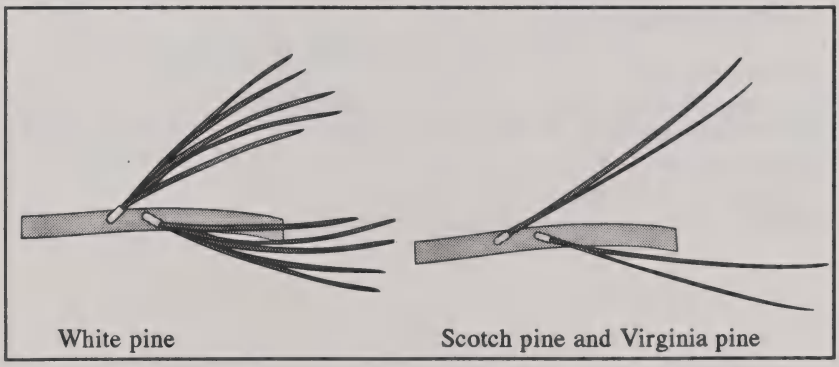
Introduction:

Use this appendix as a guide to identify host plants--species of pine. The appendix describes only pine species because they are the primary hosts for the pine shoot beetle. Also, the regulation restricts the movement of pine Christmas trees, pine nursery stock, and pine logs or lumber. And, the survey plan for the Pine Shoot Beetle Program will focus on pines.

The appendix has narrative descriptions of pine species commonly used as Christmas trees and ornamental or commercial plants.

Host pines can be located at Christmas tree farms and plantations, nurseries, ornamental or commercial plantings, saw mills, pulp mills, gathering yards, road side plantings, and privately grown stands of trees. Local contacts and sources will help find sites where pines can be found. For example, State Departments of Agriculture and Natural Resources, Forest Service, County office, Cooperative extension service, State Highway Department, and owners of Christmas tree farms and plantations, nurseries, saw and pulp mills.

Pines are evergreen with fascicles of two to five needles. A fascicle is a bundle or cluster of needles wrapped together by a dry sheath at the base of the needles. Some pines such as the white pine have five needles in a fascicle, while other pine trees such as the Scotch pine and Virginia pine have two needles. Yet, other pines have two to three needles in a fascicle.



White pine Scotch pine and Virginia pine

Pines grow from a cluster of buds at the tip of a branch. The new branches radiate from the base of each season's growth, creating a whorl. The distance between whorls depends on growing conditons and the species of pine. It ranges from 1/2 inch in mugo pine (low, broad, dense) to 4 inches in white pine.

List of Host Plants:

The remainder of this appendix is a listing of 15 pine species which are considered primary hosts to the pine shoot beetle. Provided for each pine species is information that will help you identify it.

Illustrations, pictures, and additional information can be found at the local library in the following references:

1. A Field Guide to Trees and Shrubs, George A. Petrides and Roger Tory Peterson; Peterson's Field Guide Series.

2. Audubon Society Book of Trees, Les Line and Ann and Myron Sutton.

Pinus banksiana:

Common name: Jack pine
Needles: 2 in each fascicle; 3/4 - 1 5/8 inches long; short, stout and twisted; yellow-green
Cones: 1 1/2 - 2 inches long; curved or bulging on one side; thornless scales; weak prickles
Branches: Thin and flexible, then become rough; red-brown
Bark: Red-brown
Height: 15 - 40 feet
Diameter: 9 - 15 inches
Habitat: Canada to New York, Indiana, Wisconsin, Minnesota

Pinus echinata:

Common name: Shortleaf pine
Needles: 2 and 3 in each fascicle; 3 - 5 inches long; straight and untwisted
Cones: 1 1/2 - 3 inches long; oblong; weak prickles
Branches: Whitened (a powdery covering)
Bark: Short, weak prickles on scales
Height: 90 - 100 feet
Diameter: 3 - 4 feet
Habitat: New York to Missouri, Southern States

Pinus edulis:

Common name: Pinyon pine
Needles: 2 in each fascicle; yellow-green
Cones: Short, broad with seeds up to 3/4 inches long; highly prized as food
Height: Short
Diameter: Broad
Habitat: West: Utah, Arizona, New Mexico, Colorado; intolerant of shade; shrubby growth habit found in open stands on dry foothills, slopes, and canyon sides at elevations of 5,000 - 9,000 feet

Pinus elliottii:

Common name: Slash pine
Needles: 2 and 3 in each fascicle; 8 - 12 inches long; stout; glossy, dark green
Cones: 2 - 6 inches long, chocolate brown
Branches: Stout; orange-brown
Habitat: South Carolina to Louisana; grows best on "pond margin" sites; tolerates flooding; matures at 100 years

Pinus lambertiana:

Common name: Sugar pine
Needles: 5 in each fascicle; 2 - 4 inches long; slender and twisted; blue to gray-green
Cones: 12 - 18 inches long; 4 - 5 inches in diameter; rigid scales without prickles or thorns
Branches: Slender to stout; mature trees are smooth and orange-brown
Bark: Young trees are thin, smooth and gray-green
Height: 175 - 200 feet
Diameter: 3 - 5 feet
Habitat: Oregon, California, Nevada

Pinus monticola:

Common name: Western white pine
Needles: 5 in each fascicle; 2 - 4 inches long; slender and twisted; blue-green
Cones: 4 - 9 inches long; without prickles
Branches: Slender
Height: 90 feet
Diameter: 2 1/2 feet
Habitat: Western Canada to Montana, California

Pinus mugo:

Common name: Swiss mountain pine
Needles: 2 in each fascicle; 1 1/4 - 3 inches long
Cones: 2 inches long
Branches: Slender branches grow densely to form a compact head (whorl)
Height: Selected for low ground cover (shrub form); up to 36 feet
Habitat: Mountains of Europe

Pinus nigra:

Common name: Austrian pine
Needles: 2 in each fascicle; 3-7 inches long; stiff; dark green; sharp tips; white conical bud
Cones: 2 - 3 1/2 inches long; symmetrical; yellow-brown; scales have a short prickle
Branches: Smooth, light brown
Bark: Smooth, flat plates
Height: 90 feet
Diameter: 24 inches
Habitat: Common in landscaping; tolerates limestone soil

Pinus palustris:

Common name: Longleaf pine
Needles: 3 in each fascicle; 8 - 18 inches long
Cones: 3 - 3 1/2 inches long; stout; cone-shaped
Branches: 1/2 inch or more in diameter; stout, thick
Bark: Scales over 1/2 inch wide
Height: 60 - 70 feet
Diameter: 1 - 2 feet
Habitat: Virginia to Florida to Texas

Pinus ponderosa:

Common name: Ponderosa pine, Western yellow pine
Needles: 3 in each fascicle; 3 - 15 inches long; dark green
Cones: 3 - 6 inches long
Branches: Orange-red, turpentine odor, stout
Height: 150 - 180 feet
Diameter: 3 - 4 feet
Habitat: Western North America from British Columbia to Mexico, Pacific to Nebraska, generally in areas of low rainfall; sea level - 9,000 feet; matures at 200 years

Pinus resinosa:

Common name: Red pine
Needles 2 in each fascicle; 5 - 7 inches long; slender, flexible, shiny, sharply pointed; dark green
Cones: 1 1/2 - 2 1/2 inches long
Branches: Spreading and hanging
Bark: Thornless scales; reddish
Height: 50 - 80 feet
Diameter: 1 - 2 feet
Habitat: South Canada to Minnesota, West Virginia

Pinus strobus:

Common name: Eastern white pine
Needles: 5 in each fascicle; 2 - 5 inches long; soft, slender; blue-green with white longitudinal stripes
Cones: 3 - 10 inches long; slender and tapered; thornless
Branches: Dense and horizontal; large limbs
Bark: Dark, deep groves; no scales
Height: 80 - 110 feet
Diameter: 2 - 3 feet
Habitat: Eastern Canada to Iowa, Illinois, Georgia

Pinus sylvestris:

Common name: Scotch pine
Needles: 2 in each fascicle; 1 1/2 - 3 inches long; usually twisted; bluish or grayish green
Cones: 1 1/2 - 2 1/2 inches long; unsymmetrical
Bark: Thornless; scales with sharp points; orange
Height: 60 - 90 feet
Diameter: 1 - 2 feet
Habitat: Northeastern States

Pinus taeda:

Common name: Loblolly pine
Needles: 2 or 3 in each fascicle; 5 - 10 inches long
Cones: 2 1/2 - 5 inches long; cylindrical; stout
Branches:
Bark: Scales with thorns; 1/2 inches or less wide
Height: 80 - 100 feet
Diameter: 1 - 2 feet

Pinus virginiana:

Common name: Virginia pine, scrub pine
Needles 2 in each fascicle; 1 1/2 - 3 inches long; stout, twisted; gray to yellow-green
Cones: 1 1/2 - 2 inches long; egg-shaped; small prickles; symmetrical
Branches: Purplish and whitened (a powdery covering)
Bark: Scales with thorns
Height: 30 - 40 feet
Diameter: 1 - 2 feet
Habitat: New York to Indiana, South to Georgia, Mississippi

APPENDIX 3
Inspection Procedures for the Pine Shoot Beetle (Tomicus piniperda)

Introduction:

This appendix presents techniques to use when inspecting pine trees for evidence of infestation and presence of the pine shoot beetle. Follow these techniques when:

- Conducting visual surveys of pine trees for the detection and delimiting survey aspects of the Pine Shoot Beetle Program
- Facilitating the movement of pine Christmas trees and pine nursery stock.

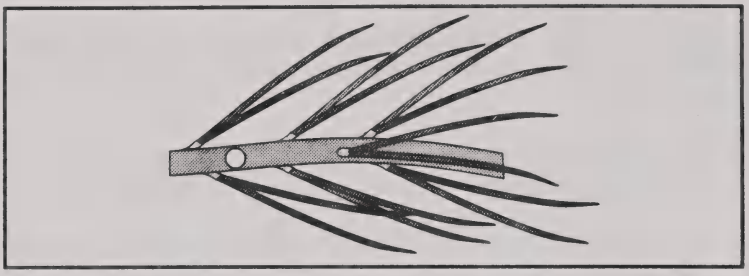
SUGGESTION: Wearing solar block sunglasses or brown tinted glasses enhances the ability to see discolored shoots.

Step 1: Look All Around the Tree for Symptoms and Evidence of Pest Infestation:

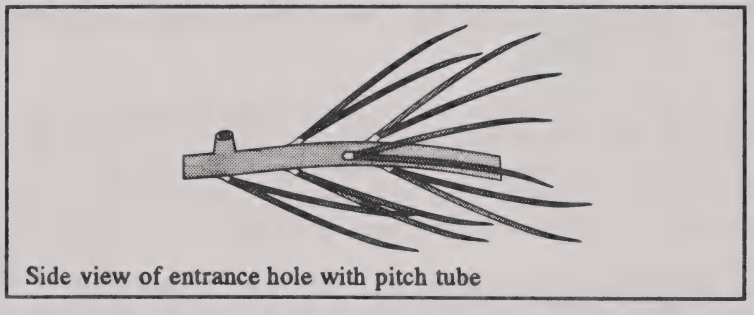
Look all around the tree for symptoms and evidence of pest infestation. Concentrate your inspection on the upper part of the tree and for nursery stock, look at all the branches. You must go beyond the initial identification of symptoms to verify the evidence. If you find any of the following symptoms, continue with your inspection by going to Step 3.

1. Discolored shoots, needles, or tips of shoots. Look for lighter greens, yellows, and browns. The discoloring may be very mild. As the growing season progresses, the occurrence of damaged shoots will be higher and the discoloring will be more pronounced. Also, in thick stemmed species such as Austrian pine, the damage is less apparent.

2. Entrance holes in the sides of shoots. The holes are round and approximately 1/8" in diameter.

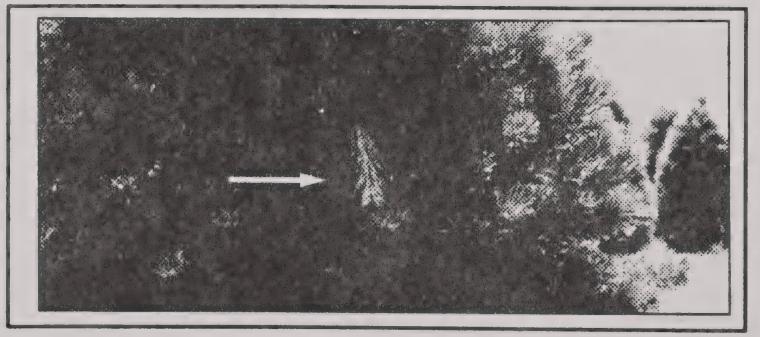


Cream colored pitch tubes may form around entrance holes. Pitch tubes are a buildup of sap which creates a collar-like formation around entrance holes when temperatures have gone below 40°F.



Side view of entrance hole with pitch tube

3. Drooping or broken shoots (tips of the lateral branches which are the current season's growth) which still may be attached to the tree.



4. Shoots which pop off the tree when you briskly brush it back and forth with your hand.

5. Shoots that have broken off the tree and are lying on the ground.

NOTE: There may be damage caused by other pests, diseases, or environmental factors. For example, white pine rust, pine shoot moths, pales weevil, cankers, or the wind.

NOTE: As the growing season progresses, you will see a higher occurrence of damaged shoots. Also, the damage will be more pronounced (browning, yellowing, drooping, tips lying on the ground).

HINT: Look at trees adjacent to mature standing trees and brood material (dead trees, logs, tree stumps, pine chips and nuggets, firewood).

HINT: When inspecting Christmas trees that have been painted, be aware that the paint does not adhere well to severely damaged shoots. The damaged shoots will still be discolored.

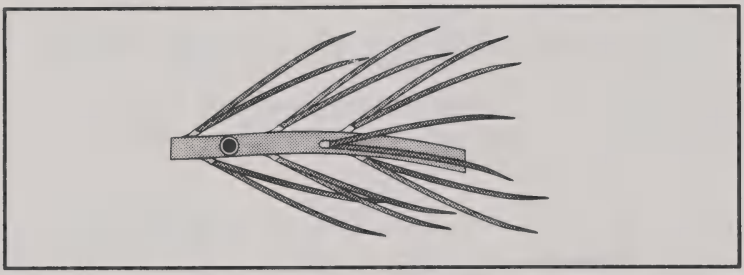
HINT: Entrance holes may be found anywhere in this year's growth or at the tip of last season's growth. Look just below the first set of branches at the base of this year's growth.

Step 2: Dissect the Shoot to Verify the Evidence:

Dissect the shoot to verify the evidence if you see a symptom of pest infestation. Evidence would include presence of a clean gallery and/or presence of the pine shoot beetle.

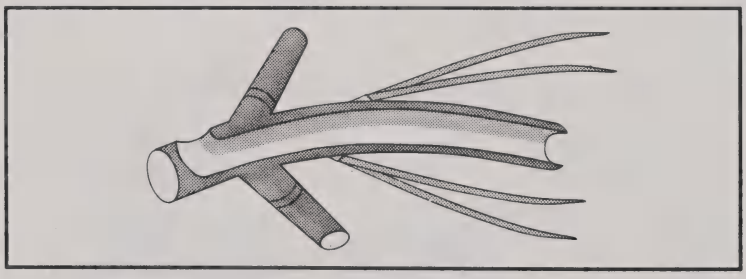
1. Using a knife, cut off the branch with the damaged shoot approximately 12 inches back from its tip (include 2 seasons of growth).

2. Rotate the shoot looking for round, 1/8" diameter entrance holes. A magnifying lens may be helpful in locating the entrance holes.



3. Horizontally slice the branch open with a knife. While securing the branch between your thumb and index finger of one hand, begin slicing slowly from the cut end through to the tip of the branch.

4. Look for a clean, hollowed or tunneled out shoot (gallery). The galleries go up or down the main terminal leader, but also go to lateral terminals. Galleries made by the pine shoot beetle are clean, open, and free of frass. There may be a pine shoot beetle present. Refer to Appendix 4 when looking for the pine shoot beetle.



5. Pick up shoots that have broken off the tree. Look at the end of the shoot and break or slice it open to see if it is solid (packed solid with frass (sawdust)) or hollow inside. Pine shoot beetle galleries are hollow.

APPENDIX 4
Identification of Tomicus piniperda (Pine Shoot Beetle)

Introduction:

Use this appendix to help you identify the pine shoot beetle (Tomicus piniperda) in its adult stage. The appendix has narrative descriptions of the pine shoot beetle.

The pine shoot beetle is a highly destructive pest of pine trees. The current season's growth (shoots) of many species of pine serve as the primary hosts for feeding by the adult beetles, while felled logs and weakened trees serve as breeding sites for the pine shoot beetle.

Once established in an area, the pine shoot beetle has a great potential to spread. Adults can fly several kilometers, and the wood, nursery stock, and Christmas trees they infest are often transported long distances.

Life Cycle:

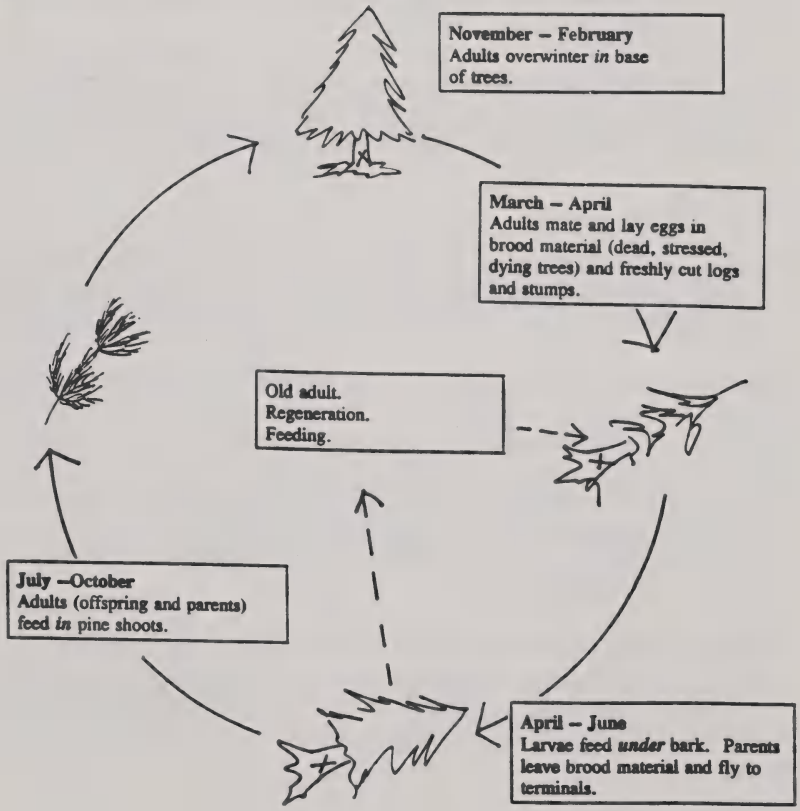
The pine shoot beetle has one generation a year. Adult beetles overwinter in short tunnels which are in and under the bark at the base of trees, but they may also overwinter in hollowed-out pine shoots in warmer climates.

In the spring, the adult beetles seek brood material (cut tree stumps or logs, or trunks of weakened, damaged trees) for breeding and reproduction. The thickness of the tree's bark needs to be greater than 4 mm (0.157 inch). Then, they mate and lay eggs in vertical galleries in the inner bark. Galleries are oriented from a golf club head-shaped nuptial chamber at the base of the trunk toward the upper or top of the trunk (parallel with the grain). The adult parent beetles will stay in brood galleries for about 2 months during February, March, or April.

The parents emerge from the brood material and fly to terminals for feeding. Their offspring, the larvae, continue feeding in galleries under the bark until they mature into adults. The next generation of beetles then tunnel through the outer bark in May and June, creating 2mm wide exit holes.

As adult beetles, they fly to the upper part of pine trees as their parents did earlier and bore into the center of the shoots (tips of the lateral branches which are the current season's growth). They feed in the center of the shoots, producing clean galleries from 4-9cm long. Each adult may destroy 3-6 shoots. Damaged shoots droop, become yellow to red and eventually fall to the ground. This feeding can retard the tree's growth.

Illustration of Life Cycle:


November – February
Adults overwinter *in* base of trees.
March – April
Adults mate and lay eggs in brood material (dead, stressed, dying trees) and freshly cut logs and stumps.
Old adult.
Regeneration.
Feeding.
July –October
Adults (offspring and parents) feed *in* pine shoots.
April – June
Larvae feed *under* bark. Parents leave brood material and fly to terminals.

Characteristics:

In its adult stage, the pine shoot beetle has the following characteristics:

1. Cylindrical shaped beetle, approximately 3-5mm (3/16 inch) in length.

2. The beetle's head is shiny black with a smooth prothorax. Its wing covers vary from reddish-brown to black.

In its larval stage, the pine shoot beetle has the following characteristics:

1. Legless, slightly curved grubs of Scolytidae, and can reach 5mm in length when fully grown.

2. The larvae have a brown head and white body.

NOTE: Immature stages, especially the pupae, are difficult to identify in the field.

Symptoms and Evidence of Infestation:

The symptoms and evidence of infestation caused by the pine shoot beetle are listed below. They are also presented with illustrations in Appendix 3 of this Manual.

1. Discolored shoots, needles, or tips of shoots. The discoloring occurs when adults feed inside the new growing tips. At the beginning of a growing season the discoloring may be very mild--lighter greens, yellows, and browns. As the growing season progresses, the occurrence of damaged shoots will be higher and the discoloring will be more pronounced. Also, in thick stemmed species such as Austrian pine, the damage is less apparent.

2. Entrance holes in the sides of shoots. The holes are round and approximately 1/8 inch in diameter. The adult beetles leave this characteristic hole where they entered the shoot. They exit using the same hole. It is common to find two or more holes in a shoot. Cream colored pitch tubes may form around entrance holes. Pitch tubes are a buildup of sap which creates a collar-like formation around entrance holes when temperatures have gone below 40°F.

3. Drooping or broken shoots which still may be attached to the tree or have broken off the tree and are lying on the ground. The center of the shoot becomes hollowed out as the beetle burrows toward the terminal bud leaving the shoot with no support.

4. Clean, hollowed or tunneled out shoot (gallery). The galleries made by the pine shoot beetle are clean, open, and free of frass. They may go up or down the terminal (main leader) or out the laterals. There will be one entrance and exit hole. Also, there may be a pine shoot beetle present.

APPENDIX 5
Examples of the Pine Shoot Beetle Survey Field Data Worksheets

Introduction:

This appendix provides you examples of the survey field data worksheets used for the Pine Shoot Beetle Program. Directions for completing survey worksheets are detailed under the Survey sections of this Manual titled Conduct Visual Surveys and Conduct Trapping Surveys.

A supply of the survey worksheets will be maintained at PPQ Regional Offices. The worksheets will be distributed upon request.

Example of a Survey Worksheet Completed for a Visual Survey

PINE SHOOT BEETLE SURVEY FIELD DATA WORKSHEET
PLEASE PRINT

1. TYPE OF DATA (Check appropriate boxes)
☐ Detection Survey ☑ Delimiting Survey ☑ Visual Survey ☐ Theysohn® Trap ☐ Lindgren® Trap

22. TRAP SERVICE RECORD (Only for Trapping Survey)

2. STATE	3. COUNTY	4. NEAREST TOWN ☐ TOWNSHIP	Date set/checked	Condition of trap (damage)	If collection is made, record PPQ Form 391 Number
IN	DeKalb	Auburn			

5. STREET ADDRESS OF PROPERTY
R.R. 1, 300 North, Concord, IN 46344

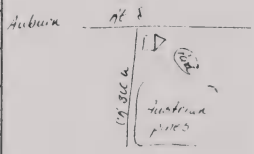
6. ADDRESS OF OWNER IF DIFFERENT FROM ABOVE
P.O. Box 123, Auburn, IN 46346

7. TYPE OF PROPERTY (nursery, tree farm, Christmas tree farm, residential, etc.)
Christmas tree farm

8. NAME OF LANDOWNER	PHONE NUMBER	9. DATE OF VISUAL SURVEY	10. TIME
Jack Pine	219-236-3111	7-14-93	10:00 am

11. SECTION NUMBER OR LEGAL DESCRIPTION	12. COORDINATES	13. Number of years in use 16
35N 5E NW NW	Lat. _____ Long. _____	Number of acres in use 40

23. MAP OF PROPERTY



14. CONDITIONS (Check)
☑ CLEAR ☐ PARTLY CLOUDY ☐ CLOUDY ☐ RAIN ☐ OTHER (Specify) _____

15. KIND OF HOST	16. NUMBER OF HOST MATERIAL LOOKED AT
Austrian Pine	30 trees

17. TREE CONDITION AND STAND STATUS
☑ GOOD ☐ POOR ☐ PURE ☐ MIXED STAND AGE 7 YEARS PLANT HEIGHT 16 FEET

18. INSPECTION RESULTS
☐ NEGATIVE ☑ POSITIVE

19. INSECT ADULTS
NUMBER COLLECTED 6 NUMBER SHIPPED 6 PPQ FORM 391 COLLECTION NUMBER IA001

20. SURVEYOR'S NAME, AGENCY, AND TELEPHONE NUMBER (Please Print)	21. DATE SUBMITTED	24. REMARKS
Holly Hock, USDA-APHIS-PPQ, 219-231-1693	7-14-93	

ample of a Survey Worksheet Completed for a Trapping vey:

PINE SHOOT BEETLE SURVEY FIELD DATA WORKSHEET
PLEASE PRINT

1. TYPE OF DATA (Check appropriate boxes): ☐ Detection Survey ☐ Delimiting Survey ☐ Visual Survey ☐ Theysohn® Trap ☑ Lindgren® Trap

22. TRAP SERVICE RECORD (Only for Trapping Survey)

2. STATE	3. COUNTY	4. ☑ NEAREST TOWN ☐ TOWNSHIP	Date set/checked	Condition of trap (damage)	If collection is made, record PPQ Form 391 Number
MI	Lake	Baldwin			
5. STREET ADDRESS OF PROPERTY: 40508 18 Mile Road, Baldwin, MI 49302			3-3-94	Good/new	
6. ADDRESS OF OWNER IF DIFFERENT FROM ABOVE					
TYPE OF PROPERTY (nursery, tree farm, Christmas tree farm, residential, etc.): Residential					
8. NAME OF LANDOWNER: Joseph Leslie	PHONE NUMBER: 616-745-3258	9. DATE OF VISUAL SURVEY	10. TIME		

11. SECTION NUMBER OR LEGAL DESCRIPTION

12. COORDINATES: Lat. _____ Long. _____

13. Number of years in use 15; Number of acres in use 70

14. CONDITIONS (Check): ☐ CLEAR ☑ PARTLY CLOUDY ☐ CLOUDY ☐ RAIN ☐ OTHER (Specify) _____

15. KIND OF HOST: White Pine

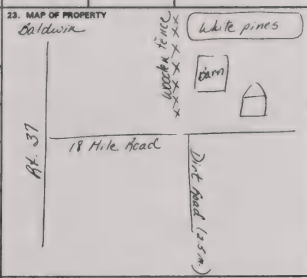
16. NUMBER OF HOST MATERIAL LOOKED AT

17. TREE CONDITION AND STAND STATUS: ☑ GOOD ☐ POOR ☐ PURE ☑ MIXED; STAND AGE 5 YEARS; PLANT HEIGHT 7 FEET

18. INSPECTION RESULTS: ☐ NEGATIVE ☐ POSITIVE

19. INSECT ADULTS: NUMBER COLLECTED _____ NUMBER SHIPPED _____ PPQ FORM 391 COLLECTION NUMBER _____

23. MAP OF PROPERTY



20. SURVEYOR'S NAME, AGENCY, AND TELEPHONE NUMBER (Please Print)	21. DATE SUBMITTED	24. REMARKS
Jack Brown, USDA-APHIS PPQ, 616-745-8331	3-3-94	

APPENDIX 6
Reporting Pine Shoot Beetle Detection Survey Data Into the National Agricultural Pest Information System (NAPIS)

Introduction:

NAPIS data base is the official mechanism to store, manage, and retrieve summarized pine shoot beetle survey data for multistate, regional, and national use. NAPIS is used for maintaining a historical record and for summarizing the results of the trapping and visual survey seasons. The raw survey data should be managed within the State and include dates and locations of individual survey activities as well as the species of host trees present on survey sites.

Each State should complete one NAPIS data input worksheet for each survey type (trapping or visual X detection or delimiting) in each county. Enter this record(s) after all survey results have been counted, but not later than December 1 of each year.

The PPQ Officer in Charge (OIC) in each State must insure that the data is tered into NAPIS by the State Survey Coordinator (SSC) or some other thorized party. The OIC is responsible for monitoring the data accuracy. Therefore, after the survey data is entered, the OIC reviews the data and compares the summarized data to the survey records. The OIC immediately corrects any errors.

A data entry worksheet is in Appendix 6 and can be reproduced for field use by data entry persons. The worksheet is also present on the NAPIS download library, identified as FORM-7. The worksheet library may be updated more frequently than the hard copy. The worksheet is designed to provide all the information needed in the correct format. Appendix B of the NAPIS User Guide explains the one-line entry, input format of the restructured NAPIS database. The SSC's or other authorized parties can use these guidelines to complete the data entry of the survey results.

Instructions:

Some of the blocks on the forms have standard entries which are already completed, while others do not require any kind of input and should be left ank.

Field	Label	Description of Contents
A	Observation Number	Unique alphanumeric identifier assigned for a given User-ID, observation year, and EPA-Pest-Code combination. Create your own unique record identifier.
B	Observation Date	Date (YYYYMMDD) of the observation or ending date for observations spanning more than 1 day. Use the date when field survey is concluded.
C	Data Source	Code from the REF-DATA-SOURCE reference file. 11=USDA-APHIS 12=US Forest Service 13=STATE AG Dept 14=UNIV/EXT 16=Joint State/Federal
D	State-County	5 digit code from the REF-STATE-COUNTY file
E	EPA Site Code	5 digit code from the REF-CROP reference file. Precompleted with code # 99999, which indicates unknown. This code is used because data is collected for an entire county with multiple sites.
F	Crop Life Stage	Leave blank, no entry required.

Field	Label	Description of Contents
G	Crop Situation	5 digit code from the REF-CROP-SITUATION reference file. Use one of the following: Detection survey = 29024 Delimiting survey = 29025
H	Location Coordinates	Leave blank, no entry required.
I	EPA Pest Code	Code from REF-PEST reference file. Precompleted with INBQCNA, which is the code for Pine Shoot Beetle.
J	Pest Life Stage	Code from the REF-PEST-LIFE-STAGE reference file. Precompleted with I5, which is code for adult insect.
K	Pest Status	Code from the REF-PEST-STATUS reference file. • If no beetles detected, enter - • If beetles are detected, enter + • If this is a new State record, enter +2 • If this is a new county record, enter +3
L	Survey Method	Code from REF-SURVEY-METHOD reference file. • For Lindgren® trap enter 00051 • For Theysohn® trap enter 00532 • For visual survey enter 00058
M	Quantification	Contains the actual raw count of all of the beetles caught in traps or found in stems represented by this record.

Field	Label	Description of Contents
N	Descriptor Units	Code from the REF-DESCRIPTOR reference file. • For trap check(s) enter 330 • For visual 371 for summarized sites of different types. If record refers to a single type of site, use appropriate code from REF-DESCRIPTOR file.
O	Total Units Checked	Contains the number of units that were checked. Units are defined by descriptor code used above. This will be the number of sites or traps in the county.
P	Positive Units	Contains the number of the traps or sites in/at which one or more beetles were detected.
Q	Observation Duration	Number of days that the observation spans (number of days between survey started and survey completed).
R	Diagnostic Lab	Code from the REF-DIAGNOSTIC-LAB reference file. must be used in conjunction with the Confirmation Method. Use only if beetles are caught; leave blank if no beetles caught.

Field	Label	Description of Contents
S	Confirmation Method	Code from REF-SURVEY-METHOD reference file. Must be used in conjunction with the Diagnostic Lab code. If beetles were caught enter 90001, which is the code for "confirmation light microscope positive find." Leave blank if none were caught.
T	Biocontrol Target	Leave blank, no entry required.
U	Notes	The space can be used for comments in English or any prearranged code.

Sample Worksheet for Pine Shoot Beetle Detection Surveys:

JANUARY 1994 FORM-7

NAPIS DATA ENTRY WORKSHEET
FOR PINE SHOOT BEETLE
ADULT SURVEYS

page-1

(Complete at least one summary record per year for each survey type (visual/trap/detection/delimiting) in each county.)

Observation Number	Observation Date (year /month /day)	Data Source
(Assigned locally) create your own record identifier	Date when survey was completed in county.	11=USDA-APHIS 12=US Forest Service 13=STATE AG Dept 14=UNIV/EXT 16=Joint State/Federal

State-County	EPA Site Code	Crop Life Stage	Crop Situation
State & county FIPS codes from reference file	9 9 9 9 No site specified	Leave blank	29024 = detection survey 29025 = delimiting survey

Location Coordinates	EPA Pest Code
Leave blank	I N B Q C N A pine shoot beetle

Pest Life Stage	Pest Status	Survey Method	Quantification
Adult	- = no beetles + = detected +2 = new state record +3 = new county record	visual = 00058 or Lindgren trap = 00051 or Theysohn trap = 00532	Total number of beetles collected or trapped.

Descriptor Units	Total Units Checked	Positive Units	Observation Duration	Diagnostic Lab
330 = pest per trap or 371 = visual survey sites	Number of traps or sites	Number of sites or traps at/in which beetles were found	Number of days between beginning & end of survey	See lab reference file for code if positives were identified

Sample Worksheet for Pine Shoot Beetle Detection Surveys: (continued)

JANUARY 1994 FORM-7

NAPIS DATA ENTRY WORKSHEET FOR PINE SHOOT BEETLE
ADULT SURVEYS
page 2

Confirmation Method	Biocontrol Target
90001 if beetles were caught. Leave blank if none caught.	Leave blank

Notes
Comments in English or prearranged code about optional information

APPENDIX 7
List of Quarantined Areas

Introduction:

Use this appendix to identify the quarantined areas which are regulated to contain the spread of the pine shoot beetle. These areas are where the pine shoot beetle has been found. The quarantined areas are presented by State and county. The entire county is quarantined unless stated otherwise.

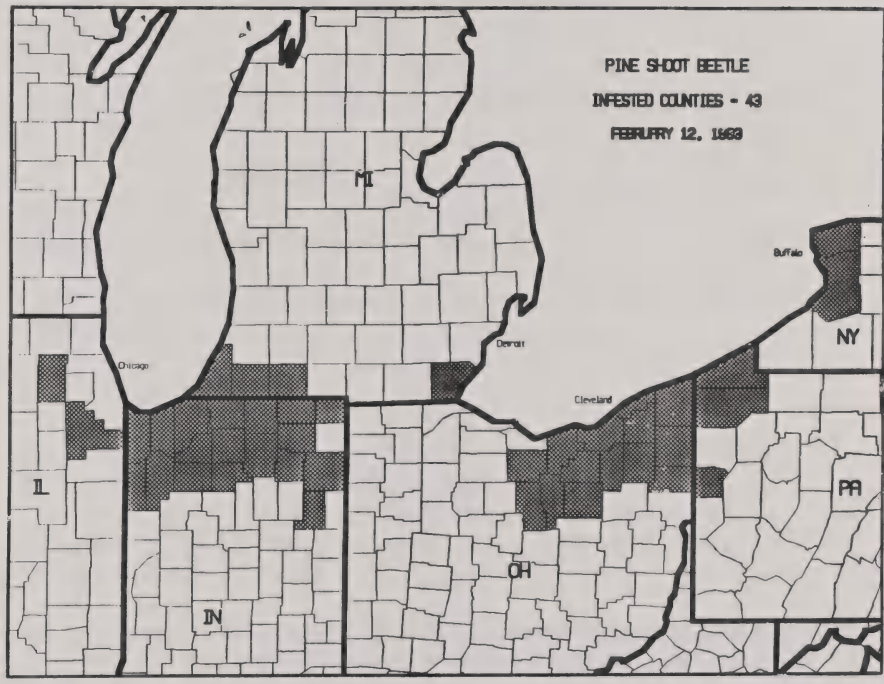
Also included in this appendix is a map which illustrates the location of the quarantined areas.

Quarantined Areas:

State:	County (entire county unless stated otherwise):	
Illinois	Kane Will	
Indiana	Allen Elkhart Fulton Jasper Kosciusko Lagrange Lake LaPorte Marshall	Newton Noble Porter Pulaski St. Joseph Starke Steuben Wells Whitley
Michigan	Berrien Cass Monroe St. Joseph	
New York	Erie Niagara	
Ohio	Ashland Ashtabula Cuyahoga Geauga Huron Lake Lorain	Mahoning Medina Portage Richland Summit Trumbull Wayne
Pennsylvania	Crawford Erie Lawrence	

Map of Quarantined Areas:

The map of Michigan, Illinois, Indiana, Ohio, Pennsylvania, and New York highlights the location of the quarantined areas (counties).



APPENDIX 8
How to Complete Limited Permits (PPQ Form 530)

Purpose:

Limited Permits (PPQ Form 530) authorize the movement of non-certified articles to specified destinations for further handling, processing, treating, or utilizing.

Introduction:

Issue a Limited Permit for the following articles as they relate to the Pine Shoot Beetle Regulation.

1. Pine logs or lumber with bark, originating in quarantined areas which are moving to a specified preapproved destination in a non-quarantined area for further handling, processing, utilizing, or treating.

2. Pine Christmas trees free from the pine shoot beetle which originate in a quarantined area destined to non-quarantined areas.

Instructions:

Use a ball point pen to complete a Limited Permit. All the information entered on the Limited Permit must be legible and accurate. Spell out correctly all names of counties, cities, and towns. If you make a minor error, cross it out and initial it. If you make a major error, destroy the Permit and make out another.

For a shipment with multiple destinations, issue one Limited Permit per consignee. This action will facilitate the monitoring of the disposal order for unsold pine Christmas trees, and the approved processing of pine logs or lumber.

The following numbered sentences correspond with the numbered blocks on a Limited Permit.

1. Date Issued--Enter the date you issue the Limited Permit.

2. Void After--Enter a date which allows sufficient but not extensive time for the shipment to reach its destination.

3. Name of Consignor--Enter name of company at destination.

4. Shipping Point--Enter the City and State of origin.

5. Name and Address of Consignee--Enter name and address of company receiving the regulated articles.

6. Vehicle License No. & State--Self explanatory.

7. R. R. Car Initials & No.--Self explanatory and line out the block if it is not applicable.

8. Description--

a. Quantity--Enter quantity of regulated articles in the shipment.

b. Article--Enter specific regulated articles in the shipment.

c. Remarks--For shipments of pine Christmas trees, write the following statement (disposal order) or stamp the statement on all three copies:

"All trees that remain unsold as of December 25 must be destroyed by burning or chipping or must be fumigated prior to January 1."

9. Signature of Issuing Officer/Cooperator--Sign the Limited Permit and distribute as directed on page 11.4.

10. Date Received--The PPQ OIC in the State of destination will either enter the date they check the shipment and find it in accordance with the Permit, or enter the date they receive the yellow copy of the Permit and enter "not checked."

NOTE: Shipments of logs and lumber moving to destinations for specified handling, processing, utilizing, or treating should be monitored to assure that shipments are in compliance with regulations.

NOTE: Shipments of cut, pine Christmas trees should be monitored by State cooperators in the State of destination to ensure that the responsible party disposes of the unsold trees by burning, chipping, or fumigating prior to January 1.

11. Signature of Destination Officer--Leave blank for the PPQ OIC to sign in the State of destination.

Sample of a Limited Permit:

No. B-379001

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE

LIMITED PERMIT

This permit must be surrendered to the consignee at destination of shipment.

This permit authorizes the movement of the **NONCERTIFIED** articles described below to a specified destination for limited handling, utilization, or processing, or for treatment. The movement of such articles is regulated by Federal or State cooperative domestic plant quarantines.

1. DATE ISSUED	2. VOID AFTER

3. NAME OF CONSIGNOR

4. SHIPPING POINT

5. NAME AND ADDRESS OF CONSIGNEE

6. VEHICLE LICENSE NO. & STATE	7. R.R. CAR INITIALS

8. DESCRIPTION

A. Quantity	B. Article	C. Remarks

9. SIGNATURE OF ISSUING OFFICER

ENDORSEMENT

The above described shipment was received by the designated consignee, and was handled in the manner approved under the provisions of all applicable Federal or State cooperative domestic plant quarantines.

10. DATE RECEIVED

11. SIGNATURE OF DESTINATION OFFICER

PENALTY FOR MISUSE OR ALTERATION (7 USC 163)

PPQ FORM 530 (SEP 84)
Previous edition may be used.

CONSIGNEE'S COPY

Distribution:

Distribute the copies of the Limited Permit as follows:

If you are a:	And the copy is:	Then:
PPQ Officer or State cooperator	Pink (Consignee's copy)	ATTACH to the waybill, invoice, or other shipping documents accompanying the shipment
	Yellow (Destination officer's copy)	FORWARD to the PPQ Officer in Charge (OIC) in the State of origin
	White (Issuing officer's copy)	RETAIN in the book
Person under Compliance Agreement (only for the movement of pine Christmas trees, or logs and lumber)	Pink (Consignee's copy)	ATTACH to the waybill, invoice, or other shipping documents accompanying the shipment
	Yellow (Destination officer's copy)	SEND to the PPQ OIC in the State of origin. For Christmas trees, within 7 days after shipment; for logs and lumber, within 1 day.
	White (Issuing officer's copy)	RETAIN in the book until a PPQ Officer or State cooperator requests the book of Limited Permits
PPQ OIC in the State of origin	Yellow	SEND to the PPQ OIC in the State of destination
PPQ OIC in the State of destination (only for the movement of pine Christmas trees)	A photocopy	PROVIDE to the State cooperator for purposes of monitoring the disposal order

APPENDIX 9
How to Issue and Monitor Compliance Agreements (PPQ Form 519)

Purpose:

Compliance Agreements (PPQ Form 519) provide a signed, written agreement with owners, operators, growers, shippers, and processors to indicate their understanding of methods, conditions, and procedures necessary for compliance with regulations.

Introduction:

Issue a Compliance Agreement for the following articles as they relate to the Pine Shoot Beetle Regulation.

1. For premises (farms and plantations) of Christmas trees originating in quarantined areas which have been found to be free of the pine shoot beetle. The Compliance Agreement allows a person operating under it to issue Limited Permits for the movement of the Christmas trees.

2. For growers/shippers of pine seedlings and nursery stock less than 24 inches tall, and greenhouse-grown pine such as bonsai originating in quarantined areas which have been found to be free of the pine shoot beetle based on a general inspection. The Compliance Agreement allows a person operating under it to issue Certificates for the movement of pine seedlings and greenhouse-grown pines.

3. For specified destinations handling, processing, utilizing, or treating (fumigation) pine logs or lumber with bark originating in quarantined areas. The Compliance Agreement allows a person operating under it to issue Limited Permits for the movement of the pine logs or lumber.

4. For specified destinations preapproved to handle, process, or utilize pine logs or lumber with bark originating in quarantined areas. The Compliance Agreement allows a person operating under it to handle, process, or utilize the logs or lumber without USDA or State supervision. **NOTE:** All logs or lumber requiring treatment (fumigation) **will** require USDA supervision.

Instructions:

Complete a Compliance Agreement using a model provided by the Region. Refer to the sample models at the end of this section (page 12.6).

Any special conditions should be specified in a remarks section or an addendum to the Compliance Agreement. For example, detailing specific locations of fields which are covered and not covered by the Compliance Agreement.

For Christmas trees, at the end of the shipping season, PPQ OIC's should require the return of all unused Limited Permits or stamps from persons operating under a Compliance Agreement.

The following numbered sentences correspond with the numbered blocks on a Compliance Agreement.

1. Name and Mailing Address of Person or Firm--Enter the name and address of the designated holder of the Compliance Agreement.

2. Location--Enter a brief description of the specific property(ies) for which the Agreement is signed.

3. Regulated Article(s)--Enter the specific regulated article to which the Agreement applies. For example, pine Christmas trees; pine seedlings less than 24 inches tall; greenhouse-grown pine; or pine logs or lumber.

4. Applicable Federal Quarantine(s) or Regulations--Enter "Federal Plant Pest Act, sections 105 and 107; Plant Quarantine Act, section 10; 7CFR Part 301.50, Pine Shoot Beetle." Additionally, if State cooperators are helping to govern the movement of the regulated articles, enter the applicable State laws in this Block.

5. Note that there is no Block 5 on the form.

6. I/We agree to the following:--Outline the stipulations which apply to the holder for each quarantine or regulation affecting the firm. Refer to the sample models at the end of this section.

Make clear to the firm that the stipulations in the Compliance Agreement do not preclude compliance with other sections of a quarantine or regulation.

If the space in Block 6 is inadequate for listing the stipulations, then enter "See attached sheets."

7. Signature--Have a responsible official of the firm sign the Compliance Agreement.

8. Title--Enter the title of the responsible official who signed the agreement representing the firm.

9. Date Signed--Enter the date signed.

10. Agreement No.--Assign a number to the Compliance Agreement.

11. Date of Agreement--Enter the same date as is in Block 9.

12. PPQ Official--Enter your name and title, or the name and title of the OIC who will be signing the Agreement.

13. Address--Enter the address of your work unit/office, or the address of your OIC.

14. Signature--Sign the Compliance Agreement, or have your OIC sign it.

15. State Agency Official--Complete this Block only when State cooperators will be helping to enforce Federal quarantines.

16. Address--Complete this Block only when State cooperators will be helping to enforce Federal quarantines.

17. Signature--Sign only when State cooperators will be helping to enforce Federal quarantines.

Sample of a Compliance Agreement:

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS

COMPLIANCE AGREEMENT

1. NAME AND MAILING ADDRESS OF PERSON OR FIRM	2. LOCATION

3. REGULATED ARTICLE(S)

4. APPLICABLE FEDERAL QUARANTINE(S) OR REGULATIONS

6. *I/We agree to the following:*

7. SIGNATURE	8. TITLE	9. DATE SIGNED

The affixing of the signatures below will validate this agreement which shall remain in effect until cancelled, but may be revised as necessary or revoked for noncompliance.

10. AGREEMENT NO.

11. DATE OF AGREEMENT

12. PPQ OFFICIAL *(Name and Title)*	13. ADDRESS
14. SIGNATURE	
15. STATE AGENCY OFFICIAL *(Name and Title)*	16. ADDRESS
17. SIGNATURE	

PPQ FORM 519 AUG. 1977 REPLACES PPQ 274, 519, 560, AND AGI 83, WHICH ARE OBSOLETE

Distribution:

1. Distribute the original copy of the Compliance Agreement to the person who signed it for the firm.

2. Distribute photocopies of the Compliance Agreement to the following:

a. The PPQ official who signed the Agreement

b. The State cooperator who signed the Agreement (if they are helping to enforce Federal quarantines)

c. The PPQ OIC in the State of destination if the Compliance Agreement was issued to firms at specified destinations for treating, handling, utilizing, or processing logs or lumber with bark.

Monitoring Compliance Agreements:

State of Origin:

In the State of origin, the PPQ OIC or State cooperator should monitor holders of Compliance Agreements on an" as needed" basis.

State of Destination:

For Christmas trees, monitor the disposal requirement by ensuring the responsible party disposes of the unsold Christmas trees by one of the following methods prior to January 1: burning, chipping, or fumigating with methyl bromide.

For logs and lumber, monitor establishments that handle, utilize, or process logs and lumber on an "as needed" basis.

Canceling Compliance Agreements:

If the holder of a Compliance Agreement does not comply with the conditions, take action to cancel the agreement.

1. Notify the holder of the reason for the cancellation orally or in writing. If you orally notify the holder, the cancellation and the reasons for cancellation should be confirmed in writing as promptly as circumstances allow.

2. Provide an opportunity for a hearing to resolve any conflicts. An appeal must be in writing and received by the Deputy Administrator's office within 10 days after the holder receives written notification of the cancellation.

Models:

On the following pages are models outlining the stipulations entered in Block 6 of Compliance Agreements for nursery stock, Christmas trees, and logs and lumber.

Model Compliance Agreement for Pine (Pinus spp.) Nursery Stock:

All regulated articles shipped from pine shoot beetle quarantined areas destined to non-quarantined areas must be accompanied by a Federal Certificate. Federal Certificates will be used only for shipments that meet the following conditions:

The regulated article is eligible for unrestricted interstate/intrastate movement under all other Federal domestic plant quarantines and regulations applicable to the regulated articles.

All regulated articles must be inspected by an officer/cooperator. Interstate/intrastate movement of pine nursery stock moving under a Certificate is permitted if the officer/cooperator determines that;

The pine nursery stock is pine seedlings less than 24 inches tall--the officer/cooperator will perform a general inspection and based on negative inspection results will issue either a Certificate or a Compliance Agreement. OR,

The pine nursery stock is greenhouse-grown pine, such as bonsai--the officer/cooperator will perform a general inspection and verify that the greenhouse is screened to prevent entry of the pine shoot beetle. Based on negative inspection results and verification that the greenhouse is screened, the officer/cooperator will issue either a Certificate or a Compliance Agreement. OR,

The pine nursery stock is of a pine other than listed above--the officer/cooperator will inspect 100 percent of the nursery stock and based on negative inspection results will issue a Certificate. OR, if evidence of infestation by the pine shoot beetle is detected in any one of the trees being sampled, the officer/cooperator can either reject the infested trees or give the grower/shipper the option to treat the infested trees with a cold treatment for 1 hour at -5°F (-20.6°C). Evidence of infestation would include a clean gallery and/or the pine shoot beetle.

AND:

The regulated article will be moved through the quarantined area during January through May, November, or December, or when the ambient air temperature is below 50°F (10°C). OR,

The regulated article will be moved through the quarantined area during June through October if the ambient air temperature is 50°F (10°C) or higher, in an enclosed vehicle or completely enclosed by a covering adequate to prevent access by the pine shoot beetle.

Cold Treatment--If evidence of the pine shoot beetle is detected in any one of the trees being sampled, the grower/shipper will be given the option to treat the infested trees with a cold treatment for 1 hour at -5°F (-20.6°C). The treatment will be supervised by an officer/cooperator. Once the cold treatment has been performed, the officer/cooperator will issue a Certificate for movement of the commodity.

Because of the uncertain effect of cold treatment on pine nursery stock, APHIS assumes no liability for possible loss or damage to the nursery stock as a result of the cold treatment.

A person or firm operating under a Compliance Agreement may issue Certificates for the interstate/intrastate movement of pine nursery stock.

The person or firm is responsible for ensuring that the Certificates left in their possession will be protected from loss, theft, or unauthorized use.

This Compliance Agreement signed on _____ allows the movement of pine nursery stock from the following properties, farms, plantations, or nurseries:

_____ _____

_____ _____

_____ _____

_____ _____

For persons or firms operating under a Compliance Agreement, distribution of copies of the Certificate is as follows:

YELLOW COPY (Consignee's copy)--Attach to the waybill, invoice, or other shipping document accompanying the shipment.

GREEN COPY--Forward to the Officer in Charge (OIC) in the State of origin within 7 days after shipment.

WHITE COPY (Issuing Officer's Copy)--Retain in the book until an officer/cooperator requests the book of Certificates.

For a shipment with multiple destinations, issue one Certificate per consignee.

A Certificate required for the interstate/intrastate movement of pine nursery stock, must be attached at all times during movement to one of the following:

1. Consignee's copy of the waybill
2. Consignee's copy of the invoice
3. Consignee's copy of other shipping documents

The Certificate must be furnished by the carrier to the consignee at destination.

Any person or firm who desires to move pine nursery stock interstate/intrastate and requires a Certificate must notify an officer/cooperator at least 48 hours in advance of the desired movement. Regulated articles must be assembled at the place and in the manner the officer/cooperator designates.

Any Certificate or Compliance Agreement may be cancelled or revoked by the officer/cooperator if they determine that the holder of the Certificate or Compliance Agreement has not complied with all of the conditions.

Certificates must be returned to the officer/cooperator upon request.

Violation of these Federal regulations can result in a criminal penalty of up to a $5,000 fine, a year in jail, or both, or a civil penalty and a fine of up to $1,000 per violation.

Model Compliance Agreement for Cut Pine (Pinus spp.) Christmas Trees:

All regulated articles shipped from pine shoot beetle quarantine areas destined to non-quarantined areas must be accompanied by a Federal Limited Permit or a Federal Certificate. Limited Permits and Certificates will be used only for shipments that meet the following conditions:

The regulated article is eligible for unrestricted interstate/intrastate movement under all other Federal domestic plant quarantines and regulations applicable to the regulated articles.

All regulated articles must be inspected by an officer/cooperator for presence of the pine shoot beetle. If evidence of infestation of the pine shoot beetle is detected in any one of the trees being sampled, then the entire shipment must be either rejected **or** treated by a cold treatment for 1 hour at -20.6°C (-5°F). Evidence of infestation would include a clean gallery and/or the pine shoot beetle.

Cold Treatment--If evidence of the pine shoot beetle is detected then the grower/shipper will be given the option to treat the Christmas trees with a cold treatment for 1 hour at -20.6°C (-5°F). The treatment will be supervised by an officer/cooperator. Once the cold treatment has been performed, the officer/cooperator will issue a Certificate for movement of the commodity.

The growers/shippers are responsible for ensuring that the Certificates left in their possession will be protected from loss, theft, or unauthorized use.

Negative Inspection--Interstate/intrastate movement of pine Christmas trees moving under a Limited Permit is permitted if the officer/cooperator makes a pest risk determination on the basis of an inspection and finds no evidence of pine shoot beetle damage or pine shoot beetles.

The number of pine Christmas trees sampled for inspection will be determined by the officer/cooperator according to the size and type of shipment. The pine shoot beetle sampling guidelines will be used.

A person or firm operating under a Compliance Agreement may issue Limited Permits for the interstate/intrastate movement of pine Christmas trees.

This Compliance Agreement signed on _____ allows the movement of pine Christmas trees from the following properties, farms, or plantations.

_____ _____

_____ _____

_____ _____

All Limited Permits must state "All trees that remain unsold as of December 25 must be destroyed prior to January 1 by burning, chipping, or fumigation."

For persons or firms operating under a Compliance Agreement, distribution of copies of the Limited Permit is as follows:

PINK COPY (Consignee's Copy)--Attach to the waybill, invoice, or other shipping documents accompanying the shipment.

YELLOW COPY (Destination Officer's Copy)--Forward to the PPQ Officer in Charge (OIC) in the State of origin within 7 days after shipment.

WHITE COPY (Issuing Officer's Copy)--Retain in the book until an officer/cooperator requests the book of Limited Permits.

For a shipment with multiple destinations, issue one Limited Permit per consignee.

The person or firm is responsible for ensuring that the Limited Permits left in their possession will be protected from loss, theft, or unauthorized use.

A Certificate or Limited Permit required for the interstate/intrastate movement of pine Christmas trees, must be attached at all times during movement to one of the following:

1. Consignee's copy of the waybill
2. Consignee's copy of the invoice
3. Consignee's copy of other shipping documents

The Certificate or Limited Permit must be furnished by the carrier to the consignee at destination.

Any person or firm who desires to move pine Christmas trees out of the quarantined area, interstate/intrastate and requires a Certificate or Limited Permit must notify an officer/cooperator at least 48 hours in advance of the desired movement. Regulated articles must be assembled at the place and in the manner the officer/cooperator designates.

Any Limited Permit, Certificate, or Compliance Agreement may be cancelled or revoked by officers/cooperators if they determine that the holder of the Limited Permit, Certificate, or Compliance Agreement has not complied with all of the conditions.

Limited Permits and Certificates must be returned to officers/cooperators upon request.

Violation of these Federal regulations can result in a criminal penalty of up to a $5,000 fine, a year in jail, or both, or a civil penalty and a fine of up to $1,000 per violation.

Model Compliance Agreement for Logs and Lumber of Pine (Pinus spp.):

All regulated articles shipped from pine shoot beetle quarantine areas destined to non-quarantined areas must be accompanied by a Federal Certificate or a Federal Limited Permit. Limited Permits and Certificates will be used only for shipments that meet the following conditions:

The regulated article is eligible for unrestricted movement under all other Federal domestic plant quarantines and regulations applicable to the regulated articles.

A Certificate will be issued for a regulated article that is to be moved interstate/intrastate and has been treated under the supervision of an officer/cooperator in accordance with an approved USDA treatment. The approved treatment for logs and lumber is fumigation with methyl bromide.

A Limited Permit will be issued for a regulated article that is to be moved interstate/intrastate to a specified destination for further treatment, handling, processing, or utilization. The destination and other conditions will be listed on the Limited Permit. Such conditions will include that the logs and lumber are:

1. Shipped in an enclosed vehicle, AND

2. Moved through the non-quarantined areas without stopping except for refueling or for traffic conditions such as traffic lights and stop signs.

A person or firm operating under a Compliance Agreement may issue Limited Permits for the interstate/intrastate movement of logs and lumber.

The person or firm is responsible for ensuring that the Limited Permits and Certificates left in their possession will be protected from loss, theft, or unauthorized use.

This Compliance Agreement signed on _____ allows the movement of logs and lumber from the following properties, yards, or mills:

_____ _____

_____ _____

_____ _____

_____ _____

For persons or firms operating under a Compliance Agreement, distribution of copies of the Limited Permit is as follows:

PINK COPY (Consignee's Copy)--Attach to the waybill, invoice, or other shipping documents accompanying the shipment.

YELLOW COPY (Destination Officer's Copy)--Forward to the PPQ Officer in Charge (OIC) in the State of origin within 1 day after shipment.

WHITE COPY (Issuing Officer's Copy)--Retain in the book until an officer/cooperator requests the book of Limited Permits.

For a shipment with multiple destinations, issue one Limited Permit per consignee.

A Limited Permit or Certificate required for the interstate/intrastate movement of logs and lumber must be attached at all times during movement to one of the following:

1. Consignee's copy of the waybill
2. Consignee's copy of the invoice
3. Consignee's copy of other shipping documents

The Limited Permit or Certificate must be furnished by the carrier to the consignee at destination.

Any person or firm who desires to move logs or lumber, interstate/intrastate and requires a Certificate or Limited Permit must notify an officer/cooperator at least 48 hours in advance of the desired movement. Regulated articles must be assembled at the place and in the manner the officer/cooperator designates.

Any Limited Permit, Certificate, or Compliance Agreement may be cancelled or revoked by officers/cooperators if they determine that the holder of the Limited Permit, Certificate, or Compliance Agreement has not complied with all of the conditions.

Limited Permits and Certificates must be returned to the officer/cooperator upon request.

Violation of these Federal regulations can result in a criminal penalty of up to a $5,000 fine, a year in jail, or both, or a civil penalty and a fine of up to $1,000 per violation.

Model Compliance Agreement for Specified Destinations Approved to Handle, Utilize, or Process Logs and Lumber:

To be developed later.

APPENDIX 10
How to Complete Certificates (PPQ Form 540)

Purpose:

Certificates (PPQ Form 540) authorize the movement of certified, regulated articles to all destinations. In lieu of PPQ Forms 540, you can use Package Certificates (PPQ Form 527) by adhering them to accompanying paper work such as an invoice where the shipment is described.

Introduction:

Issue a Certificate for the following articles as they relate to the Pine Shoot Beetle Regulation.

1. Pine seedlings less than 24 inches tall or screened, greenhouse-grown pine, such as bonsai free from the pine shoot beetle which originate in quarantined areas destined to non-quarantined areas.

2. Pine nursery stock free from the pine shoot beetle which originate in quarantined areas destined to non-quarantined areas.

3. Pine logs and lumber which have been fumigated with methyl bromide, originating in quarantined areas destined to non-quarantined areas.

4. Cut, pine Christmas trees or pine nursery stock which have been treated by cold treatment, originating in quarantined areas destined to non-quarantined areas.

Instructions:

Use a ball point pen to complete a Certificate. All the information entered on the Certificate must be legible and accurate. Spell out correctly all names of counties, cities, and towns. If you make a minor error, cross it out and initial it. If you make a major error, destroy the Certificate and make out another.

For a shipment with multiple destinations, issue one Certificate per consignee.

The following numbered sentences correspond with the numbered blocks on a Certificate (PPQ Form 540).

1. Date Issued--Enter the date you issue the Certificate.

2. Void After--Enter a date which allows sufficient but not extensive time for the shipment to reach its destination. An intercepting officer or cooperator looks at this date on the Certificate. If the date has elapsed, then contact the issuing officer for clarification.

3. Name of Consignor--Enter name of company at destination.

4. Shipping Point--Enter city and State of origin.

5. Name & Address of Consignee--Enter name and address of company receiving the regulated articles.

6. Vehicle License No. & State--Self explanatory and line out the block if it is not applicable.

7. R. R. Car Initials & No.--Self explanatory and line out the block if it is not applicable.

8. Description--

   a. Quantity--Enter quantity of regulated articles in the shipment.
   b. Article--Enter specific regulated articles in the shipment.
   c. Remarks--

   For pine nursery stock, attest that the nursery stock is free from the pine shoot beetle.

   For pine Christmas trees or nursery stock which have been treated, attest that they have been treated by a cold treatment.

   For logs or lumber which have been treated, attest that they have been treated in accordance with CFR 301.50-10.

9. Signature of Issuing Inspector/Cooperator--Sign the Certificate and distribute as directed on page 13.4.

Sample of a Certificate (PPQ Form 540):

B 048489

U.S. DEPARTMENT OF AGRICULTURE
Animal and Plant Health Inspection Service
Plant Protection and Quarantine

CERTIFICATE

This certificate must be surrendered to the consignee at destination of shipment.

The articles described below are certified under all applicable Federal or State cooperative domestic plant quarantines.

1. DATE ISSUED	2. VOID AFTER

3. NAME OF CONSIGNOR

4. SHIPPING POINT

5. NAME & ADDRESS OF CONSIGNEE

6. VEHICLE LICENSE NO. & STATE	7. R. R. CAR INITIALS & NO.

8. DESCRIPTION

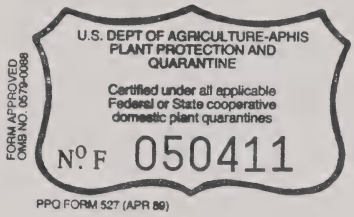
QUANTITY A	ARTICLE B	REMARKS C

9. SIGNATURE OF ISSUING INSPECTOR

PENALTY FOR MISUSE OR ALTERATION
(7-USC-163)

PPQ FORM 540
(MAR 80)

Sample of a Package Certificate (PPQ Form 527):



Distribution:

Distribute the copies of the Certificate (PPQ Form 540) as follows:

If you are a:	And the copy is:	Then:
PPQ Officer or State cooperator	Yellow (Consignee's copy)	ATTACH to the waybill, invoice, or other shipping document accompanying the shipment
	Green	FORWARD to the PPQ Officer in Charge (OIC) in the State of origin
	White (Issuing officer's copy)	RETAIN in the book
Person under Compliance Agreement (only for pine seedlings and greenhouse-grown pine, such as bonsai)	Yellow (Consignee's copy)	ATTACH to the waybill, invoice, or other shipping documents accompanying the shipment
	Green	SEND to the PPQ OIC in the State of origin within 7 days after shipment
	White (Issuing officer's copy)	RETAIN in the book until a PPQ Officer or State cooperator requests the book of Certificates
PPQ OIC in the State of origin	A photocopy	FORWARD to the PPQ OIC in the State of destination (optional)

APPENDIX 11
Network of Contacts

Introduction:

Sharing current information between PPQ OIC's and State Plant Regulatory Officers (SPRO's) is critical in the six States where the pine shoot beetle has been found and where quarantined areas exist. Therefore, use this appendix to locate and contact PPQ OIC's and SPRO's who are the contacts for the six States for information and happenings to the pine shoot beetle program.

List of Contacts for Pine Shoot Beetle Information and Happenings in Illinois, Indiana, Michigan, New York, Ohio, and Pennsylvania:

State:	PPQ Contact:	State Contact:
Illinois	Tony Drobnik, OIC USDA-APHIS-PPQ 10700 Higgins Road Suite 103 Rosemont, IL 60018 Telephone: 708-299-6939	Stanley E. Smith, Plant and Pesticide Specialist Supervisor State of Illinois Dept. of Agriculture Div. of Agricultural Industry Regulation Bureau of Plant and Apiary Protection 1010 Jorie Blvd., Rm. 20 Oakbrook, IL 60521 Telephone: 708-990-8256
Indiana	Gary Simon, OIC USDA-APHIS-PPQ Calvert Building P.O. Box 113 200-B West Washington Frankfort, IN 46041 Telephone: 317-654-7792 FAX: 317-654-8236	Dr. Robert Waltz, Director IN Dept. of Natural Resources Div. of Entomology and Plant Pathology 402 W. Washington Room 290 Indianapolis, IN 46204 Telephone: 317-232-4120

State:	PPQ Contact:	State Contact:
Michigan	David McKay, OIC USDA-APHIS-PPQ International Terminal Room 228 Metropolitan Airport Detroit, MI 48242 Telephone: 313-226-6967	Keith Creagh, Acting Director Pesticide and Plant Pest Management Division MI Dept. of Agriculture P.O. Box 30017 Lansing, MI 48909 Telephone: 517-373-1087
New York	Richard Gaines, OIC USDA-APHIS-PPQ Kanona Road R.D. 1, Box 79 Avoca, NY 14809 Telephone: 607-566-2212 FAX: 607-566-2081	Robert Mungari, Director NY Dept. of Agriculture Div. of Plant Industry 1 Winners Circle Capital Plaza Albany, NY 12235 Telephone: 518-457-2087
Ohio	Bruce Smith, OIC USDA-APHIS-PPQ Atrium Office Plaza Suite 516A 668 Euclid Avenue Cleveland, OH 44114 Telephone: 216-522-4869 FAX: 216-522-4863	Dr. W. K. Roach, Chief OH Dept. of Agriculture Div. of Plant Industry 8995 East Main Street Reynoldsburg, OH 43068-3399 Telephone: 614-866-6361 FAX: 614-759-1467
Pennsyl-vania	Carlos Martinez, OIC USDA-APHIS-PPQ Pittsburgh Int'l. Airport P.O. Box 12406 Pittsburgh, PA 15231-0406 Telephone: 412-355-2566 FAX: 412-355-2568	Lyle Forer, Chief Plant Pathology Division PA Dept. of Agriculture 2301 North Cameron St. Harrisburg, PA 17110-9408 Telephone: 717-787-4843

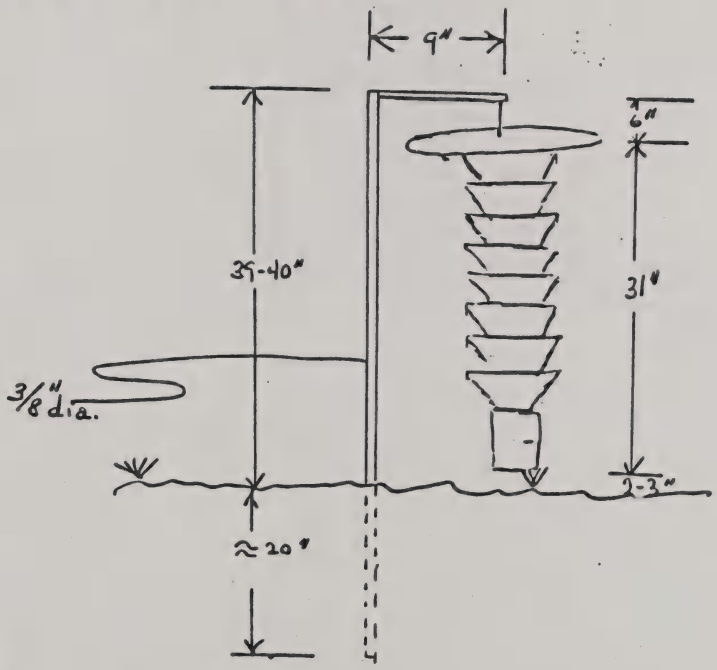
APPENDIX 12
Illustrations of Survey Traps

Introduction:

Use this appendix to see how three acceptable traps are set up and placed to conduct trapping surveys.

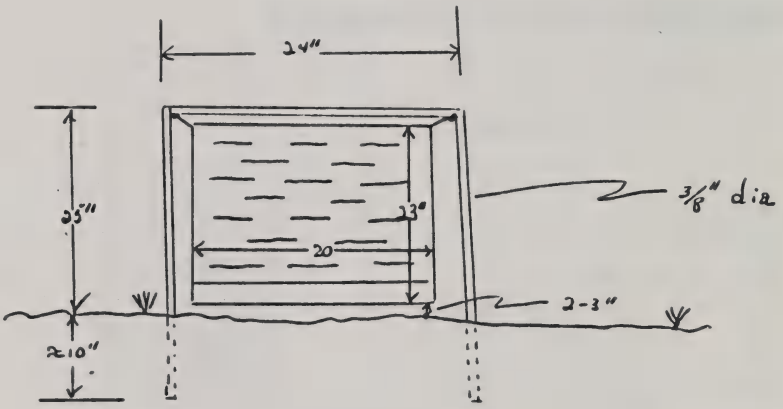
The Lindgren® and Theysohn® traps require the following lure: 2 vapona strips; and 4, 30-component dispensers that include 2, 16 ml bottles of (+) a-pinene; 1, 16 ml bottle of 3-carene; and 1, 16 ml bottle of terpinolene.

Illustration of a Lindgren® 8 Funnel Trap:



NOTE: The bottom of the Lindgren® should be elevated approximately 2" above the ground to prevent ants and other predators from entering the trap.

'stration of a Theysohn® Trap:



NOTE: The bottom of the Theysohn® should be elevated approximately 2" above the ground to prevent ants and other predators from entering the trap.

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COMMENT SHEET

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